Infor Enterprise Server Web UI Installation and Configuration Guide

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Contents

About this Guide

Document summary

This guide is intended for System Administrators. It describes how to deploy and configure Infor ES Web UI on various Java Servlet containers.

Note:

A number of screenshots in this document may be based on previous Web UI releases. They can differ slightly from your Web UI screens. However, the described functionality is identical.

To obtain the latest version of the Web UI software and the related documentation, download solution 22881482 from Infor's support site.

Contacting Infor

If you have questions about Infor products, go to the Infor Xtreme Support portal at http://www.infor.com/inforxtreme.

If we update this product or document after the product release, we will post the new version on this Web site. We recommend that you check this Web site periodically for updates.

If you have comments about Infor documentation, contact documentation@infor.com.

Introduction

1

Web UI is a browser-based user interface client on top of the following Infor LN or Baan versions:

- Infor Baan IV c4
- Infor Baan 5.0c
- Infor LN 6.1 or higher

Infor ES Web UI includes Infor Web Help, a tightly integrated browser-based help application. Infor ES Web UI does not use local resources, such as the registry. It offers global 'any time, any place' access to Infor LN. It offers a navigation framework that includes shortcuts, a navigation tree, starting/viewing (external) web pages, and the possibility to choose between several skins or color themes. Also, Web UI can be customized to a large extent.

To use the Web UI, the end user must point the browser to a web server where Web UI has been deployed into a Java servlet container.

There are two ways to deploy Web UI:

1 Deploy Web UI to a Java servlet container. See chapter 2.

2 Use the Infor Enterprise Server Installer, which will install Tomcat with Web UI pre-deployed. See chapter 3.

Note:

- Updating and uninstalling with the Enterprise Server Installer requires some files that were installed during the fresh install. If you use the first deployment method mentioned above, you cannot update or uninstall using the installer.
- For detailed information about deployment in a thin client environment, see *InforXtreme Knowledge Bulletin 22881401*.
- Check the prerequisites. See "Appendix A" on page 65.
- For details about the usage of the LN Navigator context application in Infor Ming.le™ environments, see these guides:
  - *Infor LN Role Based Home Pages Administration Guide (U9738)*
  - *Infor Ming.le-LN Plug-in - User Guide (U9647)*

Caution: The Java Connector Architecture (JCA) JCAAdapter4ERPln.jar library that is embedded in this product is copyright and proprietary to Infor Global Solutions and contains interfaces and / or APIs that are strictly private to Infor. These interfaces and / or APIs cannot be used by

external applications, devices, and / or software libraries. Usage of the JCA library will be monitored and illegal usage will be causing a non-compliancy situation.

Install Method 1 – Deploying Web UI to a Servlet Container

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Numerous Java servlet containers are available on the market and in the Open Source community. This chapter describes how to deploy Web UI to a Java servlet container.

For instructional examples of deploying Web UI to specific Java servlet containers, such as Tomcat and IBM Websphere Express, see "Appendix B, "Instructional Deployment Examples"" on page 71.

Caution: When deploying on a Tomcat servlet container, ensure that the Web UI web application is defined using a Context Descriptor file with this attribute: `useHttpOnly="false"`.

See "Appendix B, "Instructional Deployment Examples"" on page 71.

To deploy Web UI to a servlet container:

1. Locate the Web UI Web Archive (.war file).

   The Web UI software is archived in a standardized Web Archive. You need this Web Archive, webtop.war, to deploy Web UI. The webtop.war file is in the InstallableUnits/Webtop directory of the Infor Enterprise Server Installer installation media. See "appendix B" on page 71.

2. Deploy the Web UI war file in your Java servlet container.

   During deployment, the servlet container asks the root name for the Web UI Web application. Each application server uses various terms for this root name, such as the following:

   - Context Root.
   - Application URI.
   - URL Context Path.

In the remainder of this guide the notation [webui-root] is used to refer to this Web UI root name.

The [webui-root] determines the URL to the Web UI application. After deployment, you can access the Web UI through the following URLs:

- http://[hostname]:[port]/[webui-root]/servlet/admin, for administrator login
- http://[hostname]:[port]/[webui-root]/servlet/login, for user login using BaanLogin or Rexec authentication
- http(s)://[hostname]:[port]/[webui-root]/servlet/fslogin, for Single Sign On user login using Infor Federation Services (IFS) authentication or Integrated Windows Authentication (IWA). For detailed

information about the required configuration, see the *Infor Enterprise Server Single Sign On User Guide (U9559)*.

You can now continue with these actions:

- Configure Web UI. See "chapter 5" on page 21.
- Set up Web UI to connect to an Infor LN or Baan Server. See "chapter 6" on page 25.

Install Method 2 – Enterprise Server Installer

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This chapter describes these topics:

Installing Web UI through the Enterprise Server Installer

The Enterprise Server Installer includes the installation of an Open Source Java servlet container and Tomcat. This installer is useful if you plan to use Tomcat as the servlet container, or if you want to be up and running quickly. The installer takes care of Web UI configuration.

Note:

- You can also use the installer to install *Infor LN Connector for Web Services*
- Using the installer, usually only one Web UI version can be active on the web server. When installing in the same directory as before, an update is done. When installing in a new destination directory, you must use different ports (HTTP port, AJP port, and Shutdown port) and, for Windows Service, different Service names for the second Tomcat.

  Then start Web UI with the new HTTP port, for example: `http://localhost:8313`. For details on how to install Web UI on a clean system, see the *Infor Enterprise Server Installation Guide (U9484)*

For details on how to install Web UI on a clean system, refer to the *Infor Enterprise Server Installation Guide (U9484)*.

The Enterprise Server Installer can also be used to install a different version over an already existing installation. See "Updating a Web UI installation" on page 14.

Note: You can reuse the settings of the previous Web UI version in the new environment. To do this, copy the settings that you saved during the uninstallation to the [new installation-directory]\webui\config directory. For information on how to save Web UI settings, see "Uninstalling Web UI" on page 16.

For details on how to uninstall Web UI, see "Uninstalling Web UI" on page 16.

For the system requirements for the web server and desktop, see "Appendix A" on page 65.

Starting and stopping the Tomcat web server on Windows

To start the Tomcat web server, click **Start > All Programs > Infor > ese > apache-tomcat-7.0.30 > Startup Tomcat (on Port [port no])** .

To stop the Tomcat web server, click **Start > All Programs > Infor > ese > apache-tomcat-7.0.30 > Shutdown Tomcat (on Port [port no])** .

Alternatively, complete these steps:

- To start the Tomcat web server, browse to the [installation-directory]\apache-tomcat-7.0.30\bin directory and run startupTomcat.bat.
- To stop the Tomcat web server, browse to the [installation-directory]\apache-tomcat-7.0.30\bin directory and run shutdownTomcat.bat.

Note: Do not use the batch files that are part of the standard Tomcat distribution, startup.bat and shutdown.bat; these do not set the environment variables JAVA_HOME and JRE_HOME to the required values.

Installing Tomcat as a service

If you want Web UI to run when the machine is booting, you can install Tomcat as a service. During the installation you are presented with the option to do so. If you did not choose that option and wish to register Tomcat as a service afterwards, click **Start > All Programs > Infor > ese > apache-tomcat-7.0.30 > Install Service (on Port [port no])** .

Alternatively, enter the following command on the command line:

```
[installation-directory]\apache-tomcat-7.0.30\bin\installTomcatService.bat
```

Starting and stopping the service

To manually start the Tomcat service, complete one of these steps:

- Click **Start > All Programs > Infor > ese > apache-tomcat-7.0.30 > Start Service (on Port [port no])**.
- Specify this command on the command line:

  ```
  net start [service name]
  ```

Note: Specify the service name that was set during the installation. The default name is `Infor EnterpriseServer`.

To stop the Tomcat service, complete one of these steps:

- Click **Start > All Programs > Infor > ese > apache-tomcat-7.0.30 > Stop Service (on Port [port no])**.
- Specify this command on the command line:

  ```
  net stop [service name]
  ```

  Note: Specify the service name that was set during the installation. The default name is `Infor EnterpriseServer`.

Uninstalling the service

To uninstall the Tomcat service, complete one of these steps:

- Click **Start > All Programs > Infor > ese > apache-tomcat-7.0.30 > Uninstall Service (on Port [port no])**.
- Specify this command on the command line:

  ```
  [installation-directory]\apache-tomcat-7.0.30\bin\uninstallTomcatService.bat
  ```

Starting and stopping the Tomcat web server on Unix/Linux

1. Open a console and go to the installation directory to start the Tomcat web server.
2. Change directories to the apache-tomcat-7.0.30/bin subdirectory.
3. To start the web server, run ./startup.sh.
4. To stop the web server, run ./shutdown.sh.

Installing Tomcat as a service

To have Web UI start automatically when the machine is booting, create an initialization script that will run when switching run levels. Please refer to the documentation of your Unix/Linux distributor for further details.

For a machine with a SysV style initialization, create a script in /etc/init.d and links in the /etc/rc *n*.d directories.

Updating a Web UI installation

If Web UI is already installed, you can run the Enterprise Server Installer again to update the current Web UI installation.

Points of attention

The location of the previous installation is not automatically detected. If you choose a destination directory that differs from the default, you must select the “Custom" install set. Then, in the Select Install Folder page, specify the correct destination directory.

Existing user contexts, web server, Web UI configurations, and log files are not affected by an update. The update overwrites only files that are directly related to the Web UI application. These files are preserved with an update:

- User contexts

  Any user contexts created by an administrator or an end user are preserved. User contexts are located in the [installation-directory]\Webtop\config\usercontexts directory.

- Web server configuration

  Configuration of the web server is not affected by an update. Tomcat configuration is stored in the [installation-directory]\apache-tomcat-7.0.30\conf directory.

- Web UI configuration

  Configuration of the Web UI application is not affected by an update. Web UI configuration is stored in the [installation-directory]\Webtop\config directory. This includes company settings, smart links, Infor LN environments, and the Infor Web Help configuration.

- Log files

  Log files that were previously created are not removed with an update. The installation log of the update is appended to the current installationlog.txt file located in the installation root directory.

- Company logo and background image

  During an update the company logo and background image are not overwritten. If you customized the company logo or the background image, this customization is not affected by an update.

These files are modified or removed during an update:

- Web UI files

  All files located in the [installation-directory]\Webtop\web directory that were installed by the previous Web UI version are overwritten with the files contained by the update.

Note: You cannot update an old Web UI installation installed with a previous version of the Web UI Installer delivered with Web UI 8.4 and older. In this case you must uninstall the old Web UI, and then perform a "new installation" with the new installer. When you uninstall the old Web UI, ensure that you save your Web UI settings, so that you can reuse them for the new Web UI version. To save the settings, create a new directory in a location that will not be overwritten by the new installation. Then, copy the contents of the [current installation-directory]\webtop\config directory to the new directory. See these sections:

- "Uninstalling Web UI" on page 16

- "Installing Web UI through the Enterprise Server Installer" on page 11

Procedure

Note: For details on the installer pages used in the procedure, refer to the installer's online Help.

To update a Web UI installation, complete these steps:

1 Stop the web server. If you do not stop the web server, the installer will stop the web server. However if you also want to update the bundled JRE (install with VM), you may get a warning that the old JRE is in use (by Tomcat) and cannot be updated. If you do not intend to update the JRE, this is OK. Otherwise you must stop Tomcat.

   Ensure the Tomcat web server is not running.

   In Windows, complete one of these steps:

   - If Tomcat is installed as a service, click **Start > All Programs > Infor > ese > apache-tomcat-7.0.30 > Stop Service**.

     Alternatively, specify this command on the command line:

     ```
     net stop [service name]
     ```

     Note: Specify the service name that was set during the installation. The default name is `Infor EnterpriseServer`.

   - If Tomcat is not installed as a service, click **Start > All Programs > Infor > ese > apache-tomcat-7.0.30 > Shutdown Tomcat** . Alternatively, press CTRL+C in the Tomcat window that was opened when starting the Web UI server.

   In Unix/Linux, run stoptomcat.sh in the apache-tomcat-7.0.30/bin subdirectory of the Web UI installation.

2 Ensure the contents of the Enterprise Server Installer media are copied to a local directory. Go to this directory and copy a different webtop.war file over the old webtop.war file in the InstallableUnits\Webtop subdirectory.

   Also copy the InstallableUnit.info file, which contains the latest Web UI version, release, and build information. If a new ESE Installer is available, you must copy the complete Staging Area.

   Note: the same applies to ReportViewer and Connector for Web Services (C4ws).

3 Read the installationinstructions.txt file in the Staging Area main directory. This file explains how you can start the installer for various platforms.

4 Start the appropriate installer for your platform.

5 In the Introduction screen, click **Next** to display the Select install set page.

6 Select **Custom** and then click **Next** to display the Select Install Folder page.

7 Accept the default folder and click **Next** to display the Select features page.

8 Select the **Web UI for LN [version number]** check box. Clear the remaining check boxes and then click **Next** to display the Select Java virtual machine page.

9 Click **Next** to display the Update page.

10 Read the information and then click **Next** to display the Administrator Password page.

11 Optionally, change the password and then click **Next** to display the ERP Backend page.

12 Optionally, change the settings of the Infor LN or Baan server and then click **Next** to display the Summary page.

13 Check the installation summary and then click **Install.**

The installation starts.

When the installation successfully finishes, the Install Complete page is displayed.

All actions performed during this installation are logged into files in the Log folder in the installation root directory and in the [temp] folder log files, for example:

- BaseInstallerError110921150316.log
- BaseInstallerLog110921150316.log.

If you have encountered problems during the installation, you can read these files to identify the problem or send the files to Infor Customer Support.

Note: If you run the installation on Unix/Linux, the same information is also written to the console.

14 Click **Next** to display the Final actions page.

15 The installer prompts you to indicate whether you want to start the Tomcat Manager. Select the desired action and then click **Done** to display the Readme page.

16 View the Readme information:

- Read the instructions for the Web Help server. Note that the instructions written in this dialog box are not applicable for Baan IV. For information on how to install the help content for Baan IV, see "Install help content for Infor Baan IV " in "Chapter 6" on page 25.

  It is mandatory to manually define the Infor Web Help server after installation. After the installation, you can re-read instructions on how to do this by opening the postInstallMessage.htm file; this file is located on the installation media or in the [installation-directory]\webtop directory after the installation.

- Read the recommendation on generating forms. After the installation, you can re-read the message by opening the postInstallMessage_genForms.htm file; this file is located on the installation media or in the [installation-directory]\webtop directory after the installation.

17 To finish the installation, click **Done**.

Note: Web UI requires Tomcat 7.0.30 or higher. If your old Web UI installation was deployed to an older Tomcat version such as Tomcat 4.1, Tomcat 5.5, or Tomcat 6.0.32, you must install Tomcat 7.0.30 or higher and deploy the new Web UI installation to the new Tomcat version. For an instructional example of deploying Web UI to Tomcat, see "Appendix B" on page 71.

Uninstalling Web UI

Note: When you uninstall the old Web UI, ensure that you save your Web UI settings, so you can reuse them for the new Web UI version. To save the settings, create a new directory in a location that will not be overwritten by the new installation. Then, copy the contents of the [current installation-directory]\webtop\config directory to the new directory.

To uninstall Web UI or another component, you can use the uninstaller that is created during the installation process. The uninstaller is available for the Windows platform as well as for the Unix/Linux platform.

Note: For details on the uninstaller pages used in the procedure, refer to the uninstaller's online Help.

To run the uninstaller:

1 Start the uninstaller.

- On Windows

  Use the **Add/Remove Programs** option from the Control Panel. Select **Infor Enterprise Server Installer ([installation-directory])** and then click **Change/Remove**.

- On Unix/Linux

  Open an xterm prompt and start [installation-directory]/Uninstall_Enterprise_Server_Extensions/(No)VM/Uninstall.sh.

The Uninstall Infor Enterprise Server Extensions screen is displayed.

2 Read the information in the screen. Then click **Next** to display the Uninstall Options page.

3 Select **Uninstall Specific Features** and click **Next** to display the Select features page.

4 Select the features you want to uninstall and click **Next**.

The installer prompts you to indicate what to do with files created since the installation, such as user settings and log files.

5 Select **Keep all files** or **Delete all files** and click **Next** to display a Summary page. Click **Uninstall**. The uninstall starts.

When the uninstall is finished, the Uninstall Complete page is displayed. If you did not remove all Installable Units, the Final Actions page is displayed. If Connector for Web Services or Web UI is still available, you can select a check box to start the Tomcat manager.

6 To close the uninstaller, click **Finish**.

Installing LN Report Viewer

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To view the reports in the homepages delivered with Infor LN, install the LN Report Viewer. You can install the Report Viewer on the Web UI server, or on any other machine.

To install the Report Viewer, you must deploy it to Tomcat.

Points of attention:

- The Report Viewer requires Java 7.
- The LN shared libraries, which are used to access the LN database, are 32 bits. These libraries can only be run within a 32-bit Java version running on a 32-bit Operating System. Therefore, the Report Viewer only supports 32-bit Java and Tomcat on a 32-bit OS.
- Choose Tomcat as your servlet container. The Report Viewer does not run in combination with other Java servlet containers, such as IBM Websphere Express.
- Install Tomcat 6.0.32 or higher.
- Report Viewer and Web UI can run on the same machine, however this will impact on the performance adversely. Therefore, it is recommended to install Report Viewer and Web UI on different machines.
- The Report Viewer is not supported on HP-UX RISC platforms.

Installing and configuring the Report Viewer

To install and configure the Report Viewer:

1. Download solution 22944809 from the http://www.infor.com/inforxtreme site.
2. Manually deploy the Report Viewer into an already installed Tomcat servlet container.
   For an instructional example, see "Deploying Web UI and Report Viewer on Tomcat" on page 73.
3. Specify Report Viewer settings on the Web UI server.
   Complete these steps:
   1. Start the Infor ES Web UI Administration Console.
   2. In the **Infor Web UI Administration** pane, select **Infor LN**. Then click **Report Viewer**. The **Report Viewer** page appears.

3 Among other things, specify the name of the machine where the Report Viewer application is installed. For details, see the description of the **Report Viewer** page in this guide.

4 Specify a "BIRT_TEMP" environment variable that points to a directory where the Report Viewer can store its temporary files.

Note: This directory must be present and writable for the user who runs the Report Viewer Web server.

Running the Report Viewer, Web UI, and LN on a single machine

You can run the Report Viewer, Web UI, and LN on the same machine. This can be desirable for consultants who want to perform demonstrations using their laptop standalone.

To run the Report Viewer, Web UI, and LN on the same machine:

1 Set the BSE and BIRT_TEMP variables.

2 Ensure the shared library path includes `$BSE/shlib`.

3 In the Web UI Administration Console, open the **Report Viewer** page. In the **Hostname** field, specify the DNS name of the local host.

See "appendix A, "System Requirements"" on page 65.

The Infor ES Web UI Administration Console

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Starting the Web UI Administration Console

To start the Web UI Administration Console, point your browser to the following URL:

http://[hostname]:[port]/[webui-root]/servlet/admin

The administration pages navigation tree contains four categories:

- Infor ES Web UI administration. This is described in this chapter.
- Infor Web Help. This topic is covered in *Infor Enterprise Server Web UI - Installation and Configuration Guide for Infor Web Help (U8934)*
- Infor LN. See "Setting up Web UI to connect to an Infor LN or Baan server" on page 25.
- Workflow. See "Configuring Infor Workflow" on page 41.

First installation method

If you have used the first installation method to deploy Web UI, the initial administration password is `webtop`. It is strongly advised to change this password. You can do this via the Web UI Administration Console.

During the deployment no configuration parameters are asked. This chapter describes the various configuration options.

Follow the steps in chapter 6 to setup a connection with an Infor LN server.

Second installation method

If you have used the second installation method, the Web UI is configured during the installation. You can use the Infor Web UI Administration Console to verify the connection setup. To defer from the Workflow default configuration, use the Infor Workflow Admin pages.

Web UI administration pages

This section provides a short introduction on the administration pages. For detailed information, see the online help. To view the online help of a page, open the page and press F1.

Change Admin Password

Use this page to change the administrator password.

Change Configuration Directory

You can change the directory where the Web UI configuration files are stored..

Login configuration

Use this page to define the Web UI login configuration.

Basic Authorizer

Use this page to restrict users from creating or modifying user profiles.

User Profiles

Use this page to specify the user-specific Web UI settings.

Homepage Import From File

This page allows you to import homepages from a .zip file into one or more user profiles.

Languages

The **Languages** page allows you to change the default language.

Logging

Use this page to define the logging settings.

Compression

By default, messages between the browser and the web server are compressed. On this page you can adjust this setting.

Client Java Configuration

Use this page to specify Java configuration settings for all users running Web UI.

Diagnostics

This page can be used to test whether your settings result in a successful connection.

Company logos

In this administration page you can upload a new logo.

ERP home background image

In this administration page you can upload a new background.

Setting up Web UI to connect to an Infor LN or Baan server

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Note: For details on how to configure connections based on Infor Federation Services or Integrated Windows Authentication, see the corresponding chapters in the *Infor Enterprise Server Single Sign On User Guide (U9559)*.

Infor LN administration pages

This section describes the administration pages to set up the Web UI to connect to an Infor LN server.

Points of attention

- Configuring an Infor LN environment is mandatory. See "Configure an Infor LN Environment" on page 25.
- If the Infor Ming.le integration is used, Logical ID mapping is mandatory. See "Logical Id Mapping" on page 38.
- Because of performance reasons, we strongly recommend that you run the actions described in these sections:
  - "Offline/Online Form Cache Initialization" on page 28
  - "Stand-alone Form Cache Initialization" on page 32

  These sections are only applicable if you use Baan IV, Baan 5, or Enterprise Server 8.4.2 or lower.
- The other sections are optional.

To check the requirements of your Infor LN Server, see "Appendix C, "Prerequisites for the Infor ERP Server"" on page 77.

Configure an Infor LN Environment

Use the Infor ES Web UI Administration Console to specify configuration settings for one or more Infor LN Environments. For each environment you must specify various settings, such as the host name and BSE directory where the environment resides. The configuration settings are stored on the web server. Therefore, all end users can use this configuration.

1. Start the Web UI Administration Console as follows:
   http://[hostname]:[port]/[webui-root]/servlet/admin
2. Enter the administrator password. Use the password specified during deployment of Web UI. If the password was not changed, the password is `webtop`.
3. In the **Infor Web UI Administration** pane, select **Infor LN > Infor LN Environments** . The Manage Infor LN Environments page is displayed. On this page, you can add, modify, or remove environments.
   IMPORTANT: Infor Baan IV c4 and Infor Baan 5.0c require additional steps to use Web UI.
4. Specify the required information. For details on the fields, see the online help of the page.
5. Click **Save**. All values are saved on the web server.

BaanLogin SSL Protocol

If you select an environment that uses the BaanLogin SSL Protocol and click **Generate/Update Keystores**, the corresponding dialog is displayed.

Use this dialog to set configuration parameters for Single Sign On user login using Infor Federation Services authentication or Integrated Windows Authentication.

After specifying configuration parameters in the Generate/Update Keystores dialog, various other settings must be defined. See "Configuring Infor Federation Services " or "Configuring Integrated Windows Authentication" in the *Infor Enterprise Server Single Sign On User Guide (U9559)*.

Diagnostics (test the connection)

The second dialog is about Diagnostics. Click the environment you defined in the previous screen. This page can be used to test whether your settings result in a successful connection.

Company settings

You can give various companies each their own color.

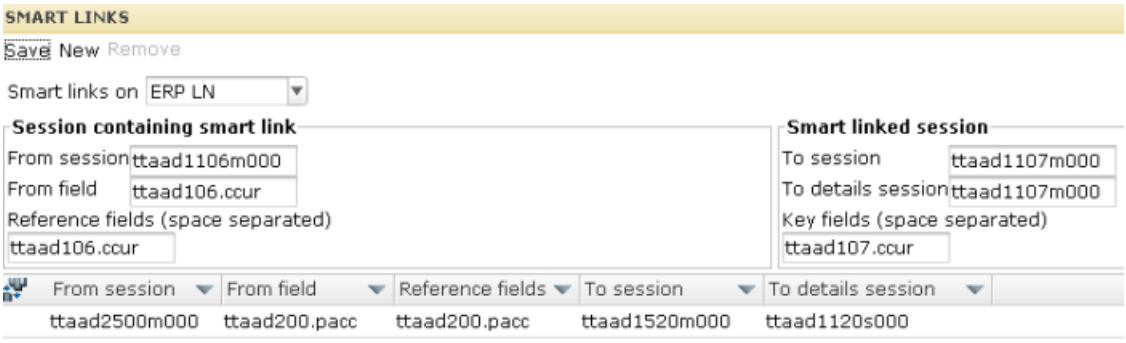
Smart links

Note: The functionality described in this section is not supported in combination with Enterprise Server 8.5 and higher.

From Enterprise Server 8.7, you can disable smart links in the Maintain Parameters (ttaad0100m000) session on the LN server.

This page deals with smart links. Smart links in Web UI provide a way to quickly zoom to a related session from an overview session.

This figure shows the Smart Links page:



These fields are available to make smart links:

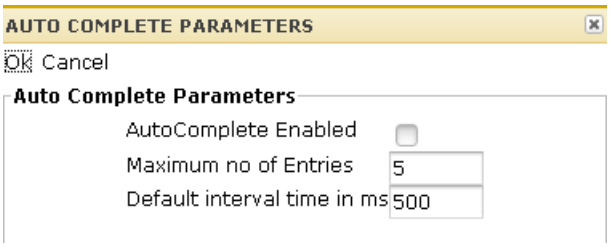
- **From session**: Specify the session code of the overview session in which the smart link must be available.
- **From field:** Specify the field name in the session from which the smart link must be available
- **To session**: Specify the session code of the overview session to which the smart link points.
- **To field**: Specify the field name in the session to which the smart link points.
- **Reference fields**: You must pass a key field to the linked session.

Auto Complete

Note: The functionality described in this section applies only to Web UI 8.4.2 and older versions.

From Web UI 8.5, Web UI users can define their own Auto Complete parameters. For details, refer to the Web UI online help.

This figure shows the Auto Complete Parameters page:



These parameters can be set for Auto Complete:

- **Auto Complete Enabled**: If checked the auto complete database on the web server will be filled and updated and an auto complete list will be shown on fields with zoom functionality.
- **Maximum no of Entries**: Tells the maximum number of possibilities which will be shown in the auto complete list.
- **Default interval time**: If on a field with zoom functionality the value is changed, auto complete sends at regular intervals a request to the web server. This is the interval time in milliseconds that is used if the web server is responsive. If the web server gets less responsive this interval will be used to automatically adjust the interval time.

Print to display

If you print a report via the Display option, a browser is started to display the requested report. A company logo and a navigation image are present on every page of this report by default. Use the options on the **Print To Display** page to remove the company logo and/or navigation images.

Baan IV Help Content Installation

To install Baan IV Help files, you must start the Infor LN Admin Pages and choose **Baan IV Help Content Installation**. Use this function if you want your customized Baan IV help available for Web UI on Baan IV. This function converts all your Baan IV help into Infor Web Help format to make it available through Web UI on Baan IV. If you only want the standard Baan IV help, it is recommended that you install the help files as available on the installation media.

Please note the following:

- Getting the help content from the Baan IV system and installing it as help content can take several hours.
- Ensure there is at least 100 MB of free disk space on the Baan IV system and on the web server.

Help is retrieved for the packages in the package combination and language of the attached user. If you want help information in another language, in the user's Web UI user profile, change the language code.

Offline/Online Form Cache Initialization

Note:

- This section is only applicable if you use Baan IV, Baan 5, or Enterprise Server 8.4.2 or lower. Enterprise Server 8.5 and higher do not use a form cache, because the forms are generated dynamically.

  If you use Enterprise Server 8.5 or higher, these restrictions apply:

  - You cannot manually configure smart links on the web server anymore. From Enterprise Server 8.7, you can disable smart links in the Maintain Parameters (ttaad0100m000) session on the LN server.
  - Smart links in details sessions are not supported.

- If you use Baan IV, we recommend that you install solution 1105763. This solution contains new XML form rendering, which is back ported from LN to Baan IV. If you install this solution, you can skip the "Offline/Online Form Cache Initialization" process described in this section. XML form rendering is another way of handling the form layout and does not require the XFE generation. XML form rendering only works with Web UI 10.1 or later. With older Web UI versions the old form rendering is still used.

  With the installation of solution 1105763, the "Offline/Online Form Cache Initialization" process becomes obsolete.

The Infor LN or Baan form definitions must be converted into a format that Web UI understands. If a user starts a session in Web UI, a process on the Web UI server checks if that converted form definition is already in the form cache. If so, the form definition is returned to Web UI. If not, the conversion process is started. When completed, the converted form definition is stored in the form cache and returned to Web UI.

The form cache initialization option allows you to pre-fill the form cache before the system is taken into production. This prevents users experiencing delays when they start a session for the first time.

Online Form Cache Initialization

The user interface of the **Online Form Cache Initialization** form is improved. It allows you to select a consecutive range of packages and a non-consecutive range of packages and modules. However, the availability of this feature depends on the version of the Infor LN or Baan system you connect to. Older versions of Infor LN or Baan systems cannot supply the required information to the **Online Form Cache Initialization** form. When you are connected to such an older version of an Infor LN or Baan back-end, a user interface is displayed that allows you to only enter a consecutive package range.

1 Open the **Online Form Cache Initialization** form and supply the following information:

- The location that is the root of the XFE dump directory structure. See the explanation of the Online Form Cache Initialization process later in this section..
- The location to store the log files.
- The location to store the form cache.

  Important: To confirm the location of the form cache directory, click **Submit**.
- The environment for which to initialize the form cache.
- The username to log onto that environment.
- The password to log onto that environment.

2 Click **Connect**. If a connection is established with the selected environment, the **Connect** button becomes disabled and the **Disconnect** button becomes enabled.

3 If the Infor LN or Baan system is connected you can supply information about available package combinations, languages, packages, and modules, select the following information:

- The package combination from the drop-down list.
- The language from the drop-down list.
- The package(s) and module(s) from the tree with check boxes.

For older Infor LN or Baan systems, the user interface displays fields that allow you to specify a consecutive range of packages only. The Online Form Cache Initialization process uses the package combination and language specified in the User Data (ttaad2500m000) session for the user that connected to the Infor LN or Baan system.

4 Click **Start**. A modal dialog, which displays the progress of the Online Form Generation process, appears.

Note: If the cache already contains forms, only those forms older than the associated XFE dump will be regenerated. Also, some optimization takes place to reduce the number of XFE dumps that will be generated and transferred.

When the Online Form Cache Initialization process has been started, the following events occur:

1 A connection is established with the Infor LN or Baan system as described in the selected environment, using the given username and password.

2 A comparison, per module, between the creation dates of the forms in the cache and similar runtime objects on the Infor LN or Baan system.

3 If a module is found that contains outdated forms in the cache, a process is started on the Infor LN or Baan system. This converts local session and form data for all sessions and forms in the given module into XML files, also known as XFE dumps.

4 The XFE dumps are collected and compressed in a tar.gz file per package, and each file is transferred to the Web UI server.

5 On the Web UI server, these tar.gz files are unpacked into the XFE Root Directory in a directory structure that reflects the origin of the XFE dumps.

6 When the tar.gz files are unpacked, a process is started on the Web UI server. This converts the XFE dumps into Java form classes that are stored into the Form Cache.

Note: To move an existing form cache, complete the following steps:

1 Open the **Online Form Cache Initialization** form.

2 Specify a new form cache directory.

3 Click **Submit**.

Offline Form Cache Initialization

If you already have XFE dumps, such as from a previous Online Form Cache Initialization, use the Offline Form Cache Initialization to convert these forms and (re-)initialize the form cache.

1 Before you start an Offline Form Cache Initialization, enter the following information:

- The location that is the root of the XFE dump directory structure. See the explanation of the Online Form Cache Initialization process.
- The location to store the log files.
- The location to store the form cache.

  Important: To confirm the location of the form cache directory, click **Submit**.
- The environment for which to initialize the form cache.
- The package combination, from the drop-down list.
- The language, from the drop-down list.
- The package(s) and module(s), from the tree with check boxes.

2 Click **Start**. A modal dialog, which displays the progress of the Online Form Generation process, appears.

Note: The choices you can select in the Offline Cache Initialization Form, such as environments, package combinations, languages, packages, and modules, are determined by the contents of the selected XFE directory. This directory structure is created during Online Form Cache Initialization. For the language part of the structure, only the language code is available. The language name is not available. Therefore, when an Online Form Cache Initialization is performed, a mapping file is created. The name of this file is lcmap.properties, and the file can be found in [xfe directory]/(hostname-part) /(bse-part). If this mapping file is not present, a fallback mechanism is present, that maps code 1 to "Dutch", code 2 to "English", code 3 to "German" and code 4 to "French". Codes that lack mapping will be displayed as they are.

To dump the XFE files on the Infor LN or Baan system, transfer the dumps to the Web UI server, and use the Offline Form Cache initialization to convert them, complete the following steps:

1 Check the following conditions:

- Ensure you are running the correct package combination. If not, do the following:
  - In the Infor LN or Baan user settings, change the package combination.
  - Convert to runtime.
  - Log off from Infor LN or Baan.
  - Re-log onto Infor LN or Baan.
- Ensure you have enough disk space available to store the form dumps on the Infor LN or Baan system. If you dump all Infor LN or Baan packages in one run, you need approximately 500 MB for each language.

2 Create a dump of the required Infor LN or Baan forms on the Infor LN or Baan server.

3 On the Infor LN or Baan system, start the **Run Program** command:

- If you logged on through Worktop or Web UI, select **Tools > Run Program** .
- If you logged on through BW, select **File > Run Program** .

4 Start the Dump Sessions in XML Format (ttadv2280m000) session.

This takes some time. In this dump session, you can export the Infor LN or Baan sessions in XML format. Each exported XML file contains general session data and all necessary form information. For details, refer to the session help.

By default, only supported Infor LN or Baan sessions are exported.

5 Transfer the session dumps to the Web UI server.

After you export the session dumps, use an FTP program to manually transfer the XML files from the Infor LN or Baan server to the Web UI server. Considering the number of files, it is recommended you compress the files into an archive. This reduces the network load and saves time when transferring the files to the Web UI server.

The XFE dumps are stored in a directory structure that reflects the origin of the XFE dumps. Therefore, the directory structure to store the XFE dumps in must adhere to some rules. The directory structure has the following format:

[XFE root dir of your choice]/[hostname]/[BSE]/[package combination]/[language code]

- [hostname] - hostname of the Infor LN or Baan system
- [BSE] - The value of the BSE environment variable on the Infor LN or Baan system.
- [package combination] - The package combination used while creating the XFE dumps.
- [language code] - A numeric value that represents the language used while creating the XFE dumps.

Note: Not all characters used in the above parameters are always valid as characters in a directory name. The following characters are replaced by an underscore (_): backslash (\), slash (/), colon (:) and space ( ). If these characters occur at the beginning or the end of a parameter, they are removed. For example:

- XFE root directory of your choice: c:\temp
- hostname: erpserver
- $BSE: /usr/erpln/bse

- package combination: 60sys32
- language code: 2 (English)

The XFE directory structure must be "c:\temp\erpserver\usr_erpln_bse\60sys32\2".

If the Infor LN system runs on Windows, a BSE environment variable usually consists of something similar to "e:\user\erpln". This must be converted into "e__user_erpln". Pay attention to the double underscore at the second and third position, as both the colon and the backslash must be replaced by an underscore.

6 Follow the procedure for Offline Form Cache Initialization to convert XFE dumps.

Note: If the cache already contains forms, only those forms that are older than the associated XFE dump will be regenerated.

Note: To move an existing form cache, complete the following steps:

1 Open the **Offline Form Cache Initialization** form.
2 Specify a new form cache directory.
3 Click **Submit**.

Stand-alone Form Cache Initialization

Note: This section is only applicable if you use Baan IV, Baan 5, or Enterprise Server 8.4.2 or lower. Enterprise Server 8.5 and higher do not use a form cache, because the forms are generated dynamically.

Form Cache Initialization can affect the performance of the LN system/the Web UI server. Web UI allows you to initialize the form cache from the command-line. To do this, complete one of the following classes in a Java Virtual Machine:

- OfflineFormCacheGenerator – for Offline Form Cache Initialization.
- OnlineFormCacheGenerator – for Online Form Cache Initialization .

Running these classes in a Java Virtual Machine requires the following settings:

- Classpath.
- Location of the Web UI application.
- Location of the file WebtopProperties.xml.
- Location of the servlet archive that your application server uses.
- Options required to perform the actual Form Cache Initialization.

Options for Stand-alone Form Cache Initialization

Option	Description
-h/--help	Displays help
-i/--info	Displays available environments (requires the –w option).
-a/--appshome	Path of application directory (required).
-w/--webtopprops	Path of directory that contains "WebtopProperties.xml" (required, except for options -h).

Option	Description
-e/--environment	Environment for which to initialize the form cache (required, except for –h and -i).
-u/--user	Username to login to the specified environment (required for Online Form Cache Initialization, except for options -h and -i).
-p/--password	Password to connect to the specified environment (required for Online Form Cache Initialization, except for options -h and -i).
-c/--packcomb	Package combination for which to initialize the form cache (required, except for options -h and -i).
-l/--language	Language for which to initialize the form cache (required, except for options -h and -i).
-s/--startpack	First package of package range (optional - defaults to " ").
-f/--finalpack	Last package of package range (optional - defaults to "zz").
-x/--xfedir	Root directory of the XFE dump directory structure (required).
-t/--tempdir	Directory to store temporary results generated during form cache initialization (optional - defaults to system temp directory).
-r/--reportdir	Directory to which the report is written (optional - defaults to temporary directory).
-d/--diag	Gives diagnostic output without executing the form cache initialization (optional).

Example

The following example shows a Windows batch-file for stand-alone Online Form Cache Initialization. It assumes the environment is created by the Enterprise Server Installer:

```
echo ONFCI - Online Form Cache Initialization
@echo off
setlocal
set ARGS=%*
if not defined ARGS set ARGS=-h
set PROPSHOME=C:\Infor\ese\Webtop\config
set SERVLETJAR=C:\Infor\ese\apache-tomcat-7.0.30\common\lib\servlet-
api.jar
set WEBAPP=C:\Infor\ese\Webtop\web
set WEBINF=%WEBAPP%\WEB-INF
set CP=%WEBINF%\lib\erp.jar;%WEBINF%\lib\webtop.jar;^
%WEBINF%\lib\jargs.jar;%WEBINF%\lib\xercesImpl.jar;^
%WEBINF%\lib\log4j.jar;%WEBINF%\lib\jdom.jar;^
%WEBINF%\lib\kjc-2.2D.jar;%WEBINF%\lib\tar.jar;^
%WEBINF%\lib\java-getopt-1.0.12.jar;%WEBINF%\lib;^
%SERVLETJAR%;%WEBINF%\classes;

set ARGS=%ARGS% -a %WEBAPP% -w %PROPSHOME%
java -cp %CP%
```

```
com.ssaglobal.erp.server.fd.pipeline.cache.OnlineFormCacheGenerator %
ARGS%
```

To call this sample Windows batch file from the command-line, or another batch file, use the following code:

```
onfci -e our_env -c b61abc -l 2 -u jhanson -p secret -x
c:\our_env\xfel -r c:\log -t c:\temp -s ts -f ts
```

This command-line executes stand-alone Online Form Cache Initialization for the ts package, in package combination b61abc, and for the English language. The LN definitions of the our_env environment provide the hostname and BSE directory of the LN system. The logon to the LN system is performed with user jhanson and password secret.

Similarly, you can perform an Offline Form Cache Initialization. However, in the last line of the previous example, enter a different classfile name. You must change the word OnlineFormCacheGenerator to OfflineFormCacheGenerator. Also, on the command-line, omit the options for username and password.

Delete Forms

Complete the following steps:

1. In the Web UI Administration Console on the Web UI server, select **Delete Forms from Form Cache**.
2. In the input fields, enter the values that represent the form you want to delete. The values act as a filter on all forms in the form cache. An empty field means "all values". For example:
   - If you leave the Host field blank, forms for all hosts will be deleted from the Form Cache.
   - If you leave all fields blank, all forms will be deleted from the Form Cache.
3. Click **Delete**.

Remove Obsolete Forms

This page contains the following options:

Option	Description
Remove Old Version Forms	Removes forms created by older form generator versions.
Remove obsolete activity forms	Removes forms from activity-related VRCs.

For details, refer to the following sections.

Remove Old Version Forms

To remove forms created by older form generator versions, complete the following steps:

1. Open the **Remove Obsolete Forms** page.
2. In the **Messages** section, read the displayed messages.

- If the form cache contains old version forms, a corresponding message is displayed in the **Messages** section; for example, `Found forms of previous FormGenerator version (s): v044, v045`
- If no old version forms are found, the following message is displayed: `No forms of previous FormGenerator versions found`

3 If the form cache contains old version forms, to remove these forms, click **Delete**.

To indicate the progress of the deletion process, messages are displayed in the **Messages** section.

Remove obsolete activity forms

Note: Use this option only if your company uses Infor LN Application Studio.

After an Infor LN Application Studio activity is closed, use this option to recover disk space on the Web UI server. The forms belonging to the closed activity are removed from the form cache. For details, refer to the Application Studio documentation.

To remove obsolete activity forms, complete the following steps:

1 Open the **Remove Obsolete Forms** page.

2 Specify the following information:

- The environment for which to remove forms from the form cache.
- The username to log onto that environment.
- The password to log onto that environment.

3 Click **Start**.

The results of the deletion process are displayed in the **Messages** section.

Report Viewer

To specify the settings for the Report Viewer, use this page. You can specify the following parameters:

Parameter	Description
Hostname	The host name of the machine on which the Report Viewer application is installed. Note: If the Report Viewer and Web UI run on the same machine, specify "localhost".
Http port number	The port number used to activate the Report Viewer application. The default port number is 80.
Https port number	The port number used by Web UI to communicate with the Report Viewer. The default port number is 8443.
Virtual directory	The virtual directory of the Report Viewer application. The default directory is "reportviewer". If you selected the default context path ("/reportviewer") during the installation of the Report Viewer, do not change this directory. If you selected a different context path during the installation, you must change the virtual directory accordingly.

Homepage Export

On the **Homepage Export** page, you can export homepages from a user profile.

When you export a homepage, the export process generates the following:

- A homepage archive file which contains the language independent content of the homepage, such as the structure of the homepage and its panes.
- A homepage property file, also known as a resource file. This file contains language-dependent content in the language the homepage was developed in. The homepages that Infor delivers are developed in English.

  A homepage property file only contains language-dependent content of the homepage itself, such as the homepage title and the titles of the panes. The file does not contain language dependent LN content used in the homepage, such as label and message descriptions.

The homepage archive files and homepage property files are automatically transferred to the LN server, and stored as additional files in the LN data dictionary. You can access the files in the Additional Files (ttadv2570m000) session.

Filenames

The names of the homepage archive files and the homepage property files have the following structure:

File type	File name structure
Homepage archive file	[homepage-id (max. 28 characters)].HPA
Homepage property file	[homepage-id (max. 28 characters)]_[ISO 639 language code]_[ISO 3166 country code].properties Note: The country code is optional, and is only used for a few languages.

For example, when you export the Warehouse Manager homepage, the following files are generated:

- warehousemanagerhomepage.HPA: Homepage archive file.
- warehousemanagerhomepage_en.properties: English Property file.

To export homepages

To export homepages, complete the following steps:

1. Open the **Homepage Export** page. The homepages you can export are displayed per user and profile.
2. Connect to the LN server: In the **Login** group box, select an Infor LN or Baan environment, enter a login code and a password, and click **Connect**.
3. In the **Package Combination** field, select the package combination which contains the package VRC where you want to store the additional files that will be generated. A list of packages and the corresponding modules is displayed.
4. Select a user and a user profile. Subsequently, select the homepage you want to export from the list.
5. Select the package and module where you want to store the additional files that will be generated.

6 Click **Export**.

Note:

- You can only export homepages from user profiles which have the "homepage creator" role assigned.
- Use the **Homepages Import** page to import the contents of a homepage archive file into other user profiles.
- For more information, refer to "Homepages" in the Web UI online help.
- LN homepages are not supported in Infor Ming.le.

Translation

The homepages that Infor delivers are developed in English. To make these homepages available in other languages, you must translate the content of the homepage property files. For details on the translation procedure, refer to *Infor LN Development Tools Development Guide (U8883)*.

Homepage Import

Infor delivers various predefined LN homepages. During the installation of LN, these homepages are installed as additional files (homepage archive files and homepage property files). Updates will be available in PMC solutions.

Before Web UI users can use homepages, you must import the corresponding additional files into their Web UI user profiles.

To import homepages, complete the following steps:

1 Open the **Homepage Import** page. The Web UI user profiles are displayed in the right pane.

2 Connect to the LN server: In the **Login** group box, select an Infor LN or Baan environment, enter a login code and a password, and click **Connect**.

3 In the **Package Combination** field, select a package combination The homepage archives in the selected package combination are displayed per package/module.

4 Select the homepage archives you want to import.

5 Select the user profiles into which you want to import the homepage archives.

6 Click **Import**.

Note:

- Before Web UI users can use the new homepages, they must log off and log on using the updated user profiles.
- Homepages created in the first release of Web UI 8.4 are delivered in .zip files. To import homepages from a .zip file, use the **Homepage Import From File** page, which is located under the **Infor Web UI Administration** node.
- You can export homepages in the **Homepage Export** page. You cannot export a homepage directly after it was imported. After an import, the Web UI users must first log off and log on using the updated user profiles.
- LN homepages are not supported in Infor Ming.le.

For more information, refer to "Homepages" in the Web UI online help.

Logical Id Mapping

This section is only applicable if you use Enterprise Server 8.5 or higher.

Use the Map Logical Ids to Web UI environments page to map logical Ids, which are used in Infor Ming.le and Infor LN environments.

The mapping between a logical Id and an Infor LN environment is used to drill back from high-level data, which is displayed in Infor Ming.le, to detailed data stored in the Infor LN environment. For details, see the Infor Ming.le documentation.

To map a logical Id to the corresponding Infor LN environment:

1. Start the Web UI Administration Console.
2. Select **Infor LN > Logical Id Mapping** . The Map Logical Ids to Web UI environments page is displayed.
3. Click **New**.
4. In the **Logical Id** field, specify the logical Id of the environment.

   To find the logical Id of an environment, log on to Infor Ming.le and view the ID of the corresponding application. In Infor Ming.le, a logical ID consists of multiple segments. When you specify the logical ID in the Web UI Administration Console, the different segments must be separated by a period.
5. In the **Name** field, select the environment from the list.
6. Click **Save**.

Configuration settings on the Infor LN or Baan server

This section describes Web UI configuration settings, which must be defined on the Infor LN or Baan server.

Personalization settings

Through the Web UI interface, the end-user can easily personalize LN sessions. See "Personalize Infor LN or Baan sessions" in the Web UI online help.

To control whether an end-user is allowed to personalize LN sessions, use the **Application Personalization** check box in the User Data Template (ttams1110m000) session.

Easy Filtering

In overview sessions, Web UI users can enter filter criteria in the input fields above the grid. See "Easy Filtering" in the Web UI online help.

To configure easy filtering for LN:

1. Select an appropriate value in the **Allow Easy Filter** field in the Maintain Parameters (ttaad0100m000) session. This field determines if, and for which fields, easy filtering will be available.
2. Convert the changes to the Runtime Data Dictionary.

See the online help of the Maintain Parameters (ttaad0100m000) session.

Decimal/Thousand Symbol

You can specify which decimal sign and thousand sign will be used in amounts in LN sessions in Web UI.

Complete these steps:

1 Start the Maintain Parameters (ttaad0100m000) session.

2 Complete one of these steps:

- Select the **Use Decimal/Thousand Symbol Client** check box. The amounts are displayed using the decimal sign and thousand sign as defined in the Windows settings on your client PC. All amounts are displayed using the same decimal sign and thousand sign.
- Clear the **Use Decimal/Thousand Symbol Client** check box. The amounts are displayed using the decimal sign and thousand sign as defined in LN. In LN, decimal signs and thousand signs are defined per software language and per currency. Therefore, different decimal signs and thousand signs can be displayed in fields in the same session.

3 To convert the changes to the Runtime Data Dictionary, click **Convert to ...**. All user files will be (re)built. To make the changes active at runtime, all users must log off and log on again.

See the online help of the Maintain Parameters (ttaad0100m000) session.

Icons in grid

In Web UI, icons can be displayed in enumerated fields in overview sessions. The icons are linked to enum constants and are displayed instead of the corresponding enum descriptions. This saves space in the grid.

If a user hovers over an icon in a grid, the corresponding enum description is displayed as a tooltip.

To ensure icons can be displayed in the grid:

1 Select the **Allow Icons In Grid** check box in the Maintain Parameters (ttaad0100m000) session.

2 Use the Domains to be Displayed as Icon (ttgfd4525m000) session to link icons to enum constants.

See the online help of the sessions mentioned.

Note:
In Web UI, users can choose whether they want to view icons or the corresponding enum descriptions. See "Personalize Infor LN or Baan sessions" in the Web UI online help.

Pictures

Some LN sessions, such as the Contact (tccom1640m000) session, contain image fields where Web UI users can add pictures. See "Pictures" in the Web UI online help.

When a user adds a picture in a session, the picture is stored in an image repository on the LN server.

To ensure users can add images in sessions, complete these steps on the LN server:

1 Optionally, change the location of the image folder.

2 Assign authorizations for the image folder and its contents.

See "Image parameters" in the *Infor Enterprise Server Administration Guide (U8854)*.

Points of attention:

- The pictures are stored in “PNG” format, which is a highly compressed image format.
- For each image field in a session, the developer of the session has specified width and height properties. When a user adds a picture in a session, these width and height properties are taken into account: when the picture is larger than the image field on the form, the picture is scaled down automatically so it fits in the image field. The size of the picture stored on the file system is reduced accordingly.
- If the dropped image is smaller than the image field, a question is asked whether the image must be scaled up. If the answer is no, the image keeps its original size. If the answer is yes, the image is enlarged automatically so it gets the size of the image field on the form.

Password aging

To benefit from this feature, Enterprise Server 8.3 or higher is required for LN. For older Infor LN or Baan versions a Tools solution is required, and there is a minimum requirement for the porting set. All of this is described in Solution 22918287.

Default output format for Display devices

When an LN user prints a report to a device of type Display, such as device D, the report is displayed on the user's screen. Reports can be displayed in HTML format or in PDF format. You must select one of these formats as the default format. This default applies to all users.

To specify the default format for devices of type Display:

1 Start the WebUI Display Device Type (ttaad3108m000) session.

2 Select the default output format: PDF or HTML.

MS Excel integration

In various LN sessions, users can export data to MS Excel.

For details, see:

- "Exporting data to and importing data from MS Excel" in the "Basic tasks" section in the LN online help
- The Web UI help
- *Infor Ming.le-LN Plug-in - User Guide (U9647)*

Note: This functionality is not supported in Baan IV and Baan 5.

Configuring Infor Workflow

7

Note: This section only applies to Infor Workflow 7.4 and 6.2.

Infor Workflow 10.1 and higher do not run in Web UI. For details on these versions, refer to:

- *User Guide for Infor Workflow Extension and Baan IVc (U9588)*
- *User Guide for Infor Workflow Extension and LN (U9589)*

To configure Infor Workflow, use the Workflow Configuration page. The configuration page is available in the Infor ES Web UI Administration Console.

See the online help of the Workflow Configuration page.

LN to Infor Ming.le integration

8

This chapter describes the integration and explains the information needed to add Infor LN as a solution in Infor Ming.le.

About the integration

The Infor LN solution can run as an application inside the Infor Ming.le shell.

Prerequisites

- The LN solution must be installed on a server. To access online help from LN in Infor Ming.le, the help files must be installed on the same server where Infor Ming.le is installed, as described in this chapter.
- Sharepoint must be installed and configured according to the instructions in the appropriate guide.

  If you want to apply Single Sign On through Infor Federation Services (IFS), See the *Infor Ming.le Installation and Configuration Guide for Active Directory Federation Services*.

  If you want to apply Single Sign On through Integrated Windows Authentication (IWA), See the *Infor Ming.le Installation and Configuration Guide for Active Directory*.
- Infor Ming.le must be installed on a server and all of its prerequisites must be met.

  If you want to apply Single Sign On through Infor Federation Services (IFS), See the *Infor Ming.le Installation and Configuration Guide for Active Directory Federation Services*.

  If you want to apply Single Sign On through Integrated Windows Authentication (IWA), See the *Infor Ming.le Installation and Configuration Guide for Active Directory*.
- The LN and Infor Ming.le servers must be able to communicate.
- Web UI and Infor Ming.le must use Infor Federation Services (IFS) or Integrated Windows Authentication (IWA) to authenticate LN users. See the relevant chapters in the *Infor Enterprise Server Single Sign On User Guide (U9559)*.

Activating the LN solution in Infor Ming.le

A Infor Ming.le-LN Plug-in file is installed with Infor Ming.le. See solution 1004534 for details on how to find the plug-in deliverable. To activate this plug-in, select the Infor Ming.le-LN Plug-in option on the Infor Ming.le Configuration screen from the SharePoint Central Administration.

This creates an LN sub-site and adds an icon to the Infor Ming.le masthead.

For complete steps on how to enable the application, see the appropriate document:

- If Single Sign On with Infor Federation Services (IFS) is used, See the *Infor Ming.le Installation and Configuration Guide for Active Directory Federation Services*.
- If Single Sign On with Integrated Windows Authentication (IWA) is used, See the *Infor Ming.le Installation and Configuration Guide for Active Directory*.

Deploying the LN solution in Infor Ming.le

To connect to the LN application from Infor Ming.le you must provide information about LN in Infor Ming.le.

Complete these steps:

1 Log on

Log on to the Infor Ming.le suite with the site collection administrator account.

2 Open the **Infor Application Deployment – New Item** page

Complete these steps:

1 Select **Site Actions > View all site content** .

2 Click **Infor Application Deployments** in the **Lists** section.

There may already be an entry for LN in this list. If not, create a new item.

3 On the **Infor Applications Deployment List** page, confirm that you do not already have an entry for the application that you want to configure. After confirming that no entry exists, click the **Items** tab above the Infor Ming.le toolbar, and click **New Item**.

3 Specify the required information

On the **Infor Application Deployment – New Item** page, specify this information:

Field	Description
Title	Specify **Infor LN** as the name of the deployed application.
Site	Use the drop-down list to specify the SharePoint sub-site associated with LN. The completed path looks like this: `https://server:port/ln` where `server` and `port` are the SharePoint server and port where Infor Ming.le is installed.
Logical ID	Specify the logical ID for the LN site associated with this LN site page of Infor Ming.le. The logical ID is a unique identifier provided during the installation of each

Field	Description
	Infor application. The value of the logical ID is unique for each instance of a given application. So, if you have more than one instance of LN installed, each instance has a logical ID. For example: `lid://infor.ln.north`, `lid://infor.ln.south`; or `lid://infor.ln.01`, `lid://infor.ln.02`. This ID, in the format `lid://infor.ln.site`, where site is your LN site name, allows Infor Ming.le to identify and communicate with the different applications with which it may be integrated. **Important!** • If drilling back from another application or ION Process to LN, ensure that the Logical ID matches the Logical ID in ION Connect for LN. See the *Infor LN – ION Integration Guide* for more information. • To create this mapping, use the Web UI Administration Console. See "Map Logical Ids To Web UI Environments".
Application Version	Specify the version of LN. By default, the version is B61Ua7stnd.
Hostname	Specify the name of the LN Web/utility server. This hostname is also used for drill-backs to the application and for accessing the online help and documents from the Documentation context application. The hostname must be a Fully Qualified Name (FQN).
Port	Specify the port used by the LN Web/utility server. This must always be the https port. The default for LN is 8443.
Context	Leave this field blank for LN.
Use HTTPS	Select this option if SSL is enabled for the LN user interface. Always select SSL for LN.
Default Tenant ID	Specify the tenant identification assigned to the application, if applicable. For example, infor is typically the tenant ID.

4 Test whether the LN user interface is accessible

Sign out from the Infor Ming.le suite, and log on to it again with the site collection administrator account. You should see the user interface for LN when you click the Infor Ming.le toolbar icon associated with LN.

Configuring LN application and user properties in Infor Federation Services (IFS)

The information below is applicable if Single Sign On with Infor Federation Services (IFS) is used.

For information on configuring Infor Federation Services (IFS) for the Web UI application, see "Configuring Infor Federation Services" in the *Infor Enterprise Server Single Sign On User Guide (U9559)*.

After configuring IFS for the Web UI application, complete the following procedure to allow users to have access to the LN Web UI application tab in Infor Ming.le.

For details, see the *Infor Federation Services Administration Guide (U9663)*.

Procedure

1. Sign in to IFS

   Open the following URL and sign in to the IFS application with a user account that is assigned to the Application Admin security role.

   ```
   https://[IFS server]:[port]/IFS/
   ```

2. Add "LN" security role and link users to this role

   Complete these steps:

   1. Select **Manage > Master Data** . The Master Data types are listed.
   2. Select the "Security Role" Master Data type and click **Details** to display the Security Role details.
   3. In the left pane, click **New**.
   4. In the right pane, specify this information:
      - **Node name**

        Specify "LN".
      - **Description**

        Specify a description for the new role.
   5. In the **Users in this Instance** pane, click **New** to start the Add Users dialog.
   6. Select the users that must use the LN application and click **OK**. The selected users are displayed in the **Users in this Instance** pane.

      Note: alternatively, you can use the Users page to link users to the "LN" role. To open this page, select **Manage > Users** . On the Users page you can also synchronize and/or upload users from Active Directory to the IFS application. See the *Infor Federation Services Administration Guide (U9663)*.
   7. Click **Submit**.

3. Link "LN" security role to LN application

   Complete these steps:

   1. Select **Configure > Applications** .
   2. On the Applications list page, select the LN application. The available security roles are displayed in the **Security Roles** pane.
   3. Select the "LN" role and click **Submit**.

Adding users to the LN user group

The information below is applicable if Single Sign On with Integrated Windows Authentication (IWA) is used.

For information on configuring Integrated Windows Authentication (IWA) for the Web UI application, see "Configuring Integrated Windows Authentication" in the *Infor Enterprise Server Single Sign On User Guide (U9559)*.

After configuring IWA for the Web UI application, complete the following procedure to allow users to have access to the LN Web UI application tab in Infor Ming.le.

To add users to the LN user group:

1. Log on as site collection administrator to the Infor Ming.le site.
2. Click the LN icon on the Infor Ming.le toolbar to ensure that you are on the LN home site.
3. Select **Site Actions > Site Permissions** .
4. Add users or groups to the list by clicking **Grant Permissions** in the ribbon. You can create groups with different permissions. The minimal permission required is Read.
5. Click **OK**.

Installing the Help Files for LN

The LN online help files are not included in the Infor Ming.le-LN Plug-in. To access the online help within Infor Ming.le, you must add the help files to the server where Infor Ming.le is installed.

Complete these steps:

1. Download the help files from Infor Support Solution #22944448.
2. Create an “Infor.LN” folder in the "%PROGRAMFILES%\Common files\Microsoft Shared\Web Server Extensions\14\TEMPLATE\LAYOUTS" folder.
3. Create a “help” folder in the new "Infor.LN” folder.
4. Unzip the contents of the LN help files, baanerp_ *.zip, EnterpriseServer_*.zip, webtop_*.zip, into the new "help” folder.

After you install these files and you access the Infor LN sub-site in Infor Ming.le, you see the LN documentation in the Documentation context application.

The default LN version is B61Ua7stnd. This version contains the FP7 online help and PDF documentation. If you create multiple LN versions, you must complete additional steps to view the online help and PDF documentation of the additional LN versions. See "Viewing online help of other versions" on page 47 and "Viewing PDF documentation of other versions" on page 48.

Viewing online help of other versions

This section provides an example on how to view online help of other versions.

Example- Viewing FP6 online help

To view the FP6 online help:

1. Install the FP6 online help on the Infor Ming.le Server. A folder named "B61Ua6stnd" is created.
2. Specify B61Ua7stnd as Application Version in Infor Ming.le.
3. Start a session in Infor Ming.le and press F1. A window pops up.
4. To maximize the window and view the URL, press F11.

   For example, if you press F1 in the Sales Order - Lines (tdsls4100m900) session, the URL has this format:

   ```
   https://[server name].pmm.com/_layouts/Infor.LN/help/en-US/ln/B61Ma6/
   default.html?helpcontent=help/td/pur/tdpur4100m900.html^tdpur400.otad&infor
   ThemeName=InforBlue
   ```

5. The version in the URL, B61Ma6, is retrieved from the LN server to which you are connected. This version must correspond with a folder on the Infor Ming.le server. Therefore, complete these steps:
   a. If no "B61Ma6" folder exists, create a copy of the B61Ua6stnd folder that was created during the installation of the FP6 help.
   b. Rename the new folder to “B61Ma6”.

Viewing PDF documentation of other versions

The default LN version is B61Ua7stnd. This version shows the FP7 PDF documentation.

To view documentation of other versions:

1. In Infor Ming.le, select **Site Actions > View All Site Content > Infor Applications** .
2. Ensure the Application Version of the Infor application matches the name of the folder that was created during the installation of the help files.

   For example, if you installed the FP6 help files, a "B61Ua6stnd" folder is created. To view the FP6 PDF documentation, change the Application Version of the Infor application to "B61Ua6stnd”.

Running multiple LN instances in Infor Ming.le

You can run multiple instances of LN inside a single instance of Infor Ming.le. Each LN instance runs in a separate tab.

Note: Because of the high memory usage of the LN user interface, we do not recommend running multiple instances of LN inside a single instance of Infor Ming.le.

To add an additional LN environment to Infor Ming.le:

1. Log on, as site collection administrator, to the site collection where you want to add the new environment.
2. Click **Home** to navigate to the Infor Ming.le home site.
3. Select **Site Actions > New Infor Ming.le Site** .

4 On the Infor Ming.le Site page, specify this information:

- **Plug-in Name**

  Select **Infor Ming.le-LN Plug-in - Site Collection Level Feature**.

- **Title**

  Specify the name that must be displayed in the new tab. For example, LN Test, or LN Demo.

- **[Infor Ming.le server URL]/<URL name>**

  Specify a URL name, for example, Intest or In2. This name is used to create the URL for the new sub-site.

Note: The **Application Home URL** field is read-only because it is configured automatically as part of the Infor Ming.le-LN Plug-in.

5 Click **OK**.

6 Refresh the page. The new tab is created. A new icon, with the title of the new site, is displayed in the panel on the left side of the page.

A message is displayed.

7 Create a deployment. Complete these steps:

a Select **Site Actions > View All Site Content** .

b Select **Infor Application Deployments**.

c Click **Add new item**.

d Specify the required information for the new deployment. See "Deploying the LN solution in Infor Ming.le" on page 44.

Note: The **Title** and **Logical ID** of the new deployment must differ from the **Title** and **Logical ID** of the already existing LN deployment.

e Click **Save**.

The application is now running in the new tab.

LN Navigator

Infor Ming.le-LN Plug-in users can use the LN Navigator context application to navigate to LN applications and to find applications on code or description.

Dependent on the user profile, the **LN Navigator** can contain these tabs:

- **Processes**

  This tab contains the DEM Process Browser. Users can navigate to LN applications based on predefined DEM process flows.

- **LN**

  This tab contains a folder tree to navigate through the LN menu structure, and start sessions.

- **Options**

  Use this tab to start sessions by code, and to switch to another LN company number.

See the *Infor Ming.le-LN Plug-in - User Guide (U9647)*

For details about the installation of the LN Navigator context application, See the *Infor LN Role Based Home Pages Administration Guide (U9738)*

Support information

The support for the context applications and the corresponding Infor Ming.le technology depends on the combination of the LN application version and LN Tools version.

Note:

- In LN, only Infor Ming.le version 11.0.3 or later is supported.
- For LN 10.2.1 and 10.3, ION v11 is required.

This table shows, per combination of LN application and Tools version, which Infor Ming.le features are supported :

Infor Ming.le features	**Application**	**10.2.1**	**10.3**
	Tools	**10.2.1**	**10.3**
Tasks context application		Yes	Yes
Alerts context application		Yes	Yes
Paparazzi context application		Yes Requires BOD references to be sent as part of JSON message. See these InforXtreme Knowledge Bulletins: • Apps *InforXtreme Knowledge Bulletin 1384493*, July 2013 • Tools *InforXtreme Knowledge Bulletin 1384449* (weekly 1389216), March 2013	Yes

Infor Ming.le features	Application	10.2.1	10.3
	Tools	10.2.1	10.3
Sharing LN application drillback links via Infor Ming.le shell		Yes	Yes
Social objects		Yes	Yes
Drillbacks (BODs)		Yes	Yes
Metrics		Yes	Yes
Infor Federation Services - Single Sign-On		Yes	Yes
In-Context BI		Yes	Yes

This table shows, per combination of LN application and Tools version, which other context applications and features, used by Infor LN, are supported:

Context application / Feature	Application	10.2.1	10.3
	Tools	10.2.1	10.3
Infor LN Navigator		Yes	Yes
Infor LN Home Page		Yes	Yes
Infor LN Session		Yes	Yes
In-Context URL Viewer		No	Yes
Documentation context application		Yes	Yes
In-Context Help		Yes	Yes
Twitter		Yes	Yes
Maps		Yes	Yes
SSO Integrated Windows Authentication		Yes	Yes

Note: For the latest support information, see *InforXtreme Knowledge Bulletin 1441844*.

Exchange Synchronizer

9

This chapter describes how to configure and start the Exchange Synchronizer.

The Exchange Synchronizer synchronizes contacts and calendar events between Microsoft Exchange and LN CRM. See "Synchronization of CRM contacts and activities to Microsoft Exchange" in the Infor Web Help.

Prerequisites

One of these Microsoft Exchange versions must be installed on the Exchange server:

- Microsoft Exchange 2007 with SP1 or a higher SP
- Microsoft Exchange 2010

Configuring and starting the Exchange Synchronizer

The Exchange Synchronizer runs on the Web UI web server. Before you can start the Exchange Synchronizer, various configuration settings must be specified.

To configure and start the Exchange Synchronizer:

1. Configure Microsoft Exchange
   See "Configuring Microsoft Exchange" on page 54.
2. Make Microsoft Exchange trusted in Tomcat
   See "Making the Exchange server trusted in Tomcat" on page 59.
3. Configure the Exchange Synchronizer in LN
   See "Configuring the Exchange Synchronizer in LN" on page 61.
4. Start the Exchange Synchronizer
   See "Starting the Exchange Synchronizer" on page 62.

Troubleshooting

For an overview of possible problems and solutions, see "Troubleshooting" on page 62.

Configuring Microsoft Exchange

Prerequisites

Basic authentication must be allowed for the Exchange webservice, only on https. In a default Microsoft Exchange Server configuration, basic authentication is allowed.

To enable Basic Authentication on the Exchange Web Services, run the following Exchange command; there is no GUI equivalent to set the Authentication:

```
Set-WebServicesVirtualDirectory -Identity * BasicAuthentication $True
```

To confirm that Basic Authentication is enabled on the Exchange Web Services, run this command:

```
Get-WebServicesVirtualDirectory |FL
```

Verify that the BasicAuthentication parameter has the value ‘True’. See http://technet.microsoft.com/en-us/library/aa997233(EXCHG.80).aspx.

Impersonation

To use the Exchange Synchronizer, impersonation must be allowed and configured on the Exchange Server. See these sections:

- "Enabling the impersonation (Exchange Server 2007)" on page 55
- "Enabling the impersonation (Exchange Server 2010)" on page 58

This table shows the user account types that are used in the impersonation configuration:

Impersonation User	A user who can impersonate a given user account. The impersonation user can perform operations with the authorizations of the impersonated account, instead of the impersonation user's own authorizations. The user account of the impersonation user matches the Exchange account specified in the MS Exchange Synchronization Settings (ttaad2140m000) session.
Impersonated user	A user for whom changes must be done, by the Exchange Synchronizer, via the impersonation user. The user accounts of the impersonated users match the E-mail addresses of the users specified in the MS Exchange Synchronization Users (ttaad2141m000) session.

Enabling the impersonation (Exchange Server 2007)

To enable the impersonation, you must grant extended permissions. Complete these steps:

1. Start a Powershell on the Client Access Server.
2. Grant the impersonation user permission to submit an impersonation call through a Client Access Server

   Run this command:

   ```
   Add-AdPermission -Identity (Get-ExchangeServer -Identity "[Client Access Server]").Identity -User "[Impersonation User]" -ExtendedRights ms-Exch-EPI-Impersonation
   ```

3. Grant the impersonation user permission for the account(s) to be synchronized (the so called impersonated accounts)

   To grant impersonation user permission, complete either of these steps:

   1. To grant permission to impersonate a single account, run this command:

      ```
      Add-ADPermission -Identity "[Impersonated User Identity]" -User "[Impersonation User]" -ExtendedRight ms-Exch-EPI-May-Impersonate
      ```

      Repeat this step for each account to be synchronized.

   2. To grant permission to impersonate all accounts for all databases, run this command:

      ```
      Get-MailboxDatabase | ForEach-Object {Add-ADPermission -Identity $_.DistinguishedName -User "[Impersonation User]" -ExtendedRights ms-Exch-EPI-May-Impersonate}
      ```

      Note: Running this command grants the 'May-Impersonate' role to the impersonation user for all your Exchange user mailboxes.

4. Verify the changes

   To verify your changes, run these commands:

   1. Get all accounts that have the permission to submit an impersonation call through the referenced Client Access Server:

      ```
      get-adpermission -identity (get-exchangeserver -identity "[Client Access Server]").identity | where {$_.extendedrights -like "ms-exch-epi-impersonation"} | FL
      ```

   2. Get the impersonated accounts:

      ```
      get-adpermission -identity "[Impersonated User Identity]" | where {$_.extendedrights -like "ms-Exch-EPI-May-Impersonate"} | FL
      ```

For detailed instructions, see http://msdn.microsoft.com/en-us/library/bb204095(v=exchg.80).aspx.

Example

This table shows the parameters that are used in this example:

Client Access Server	server.domain.com

Impersonation user	Domain	Domain
	Username	ImpersonationUser
	Identity	Impersonation User ID
Impersonated user	Domain	Domain
	Username	ImpersonatedUser
	Identity	Impersonated User ID

To enable the impersonation, you run these commands. The step numbers correspond with the step numbers in the "Enabling the impersonation" procedure. See "Enabling the impersonation (Exchange Server 2007)" on page 55.

1. Start a Powershell on the Client Access Server.
2. Grant the impersonation user permission to submit an impersonation call through a Client Access Server

   Run this command:

   ```
   Add-AdPermission -Identity (Get-ExchangeServer -Identity "server.domain.
   com").Identity -User "Domain\ImpersonationUser" -ExtendedRights ms-Exch-
   EPI-Impersonation
   ```

3. Grant the impersonation user permission for the account(s) to be synchronized (the so called impersonated accounts)

   Complete either of these steps:

   1. To grant permission to impersonate a single account, run this command:

      ```
      Add-ADPermission -Identity "Impersonated User ID" -User "Domain\
      ImpersonationUser" -ExtendedRight ms-Exch-EPI-May-Impersonate
      ```

      Repeat this step for each account to be synchronized.

   2. To grant permission to impersonate all accounts for all databases, run this command:

      ```
      Get-MailboxDatabase | ForEach-Object {Add-ADPermission -Identity $_.
      DistinguishedName -User "Domain\ImpersonationUser" -ExtendedRights ms-
      Exch-EPI-May-Impersonate}
      ```

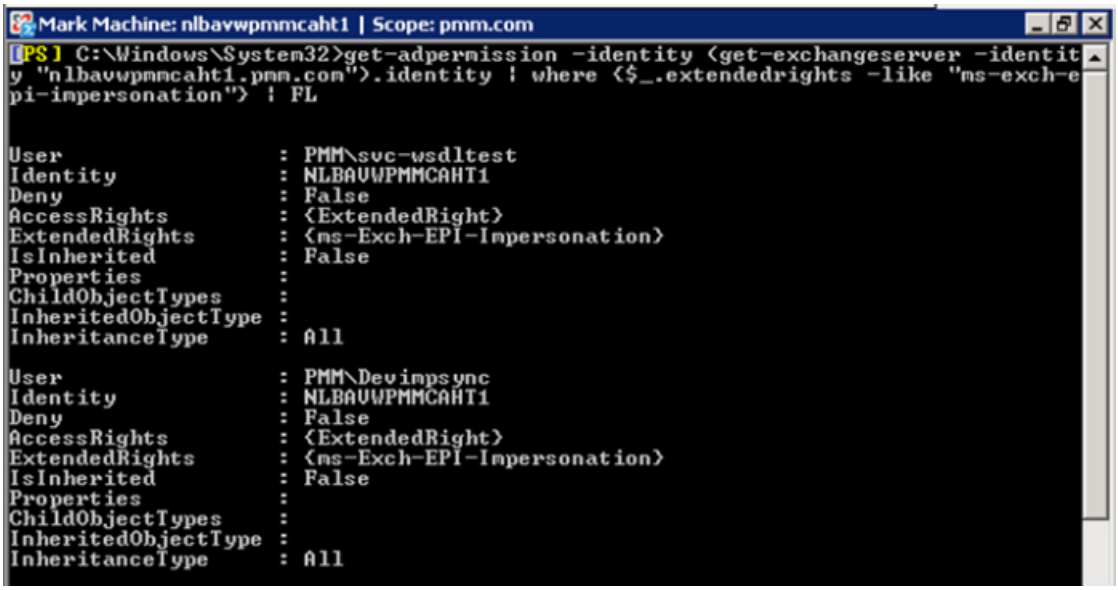
4. Verify the changes

   To verify your changes, run these commands:

   1. Get all accounts that have the permission to submit an impersonation call through the referenced Client Access Server:

      ```
      get-adpermission -identity (get-exchangeserver -identity "server.domain.
      com").identity | where {$_.extendedrights -like "ms-exch-epi-
      impersonation"} | FL
      ```

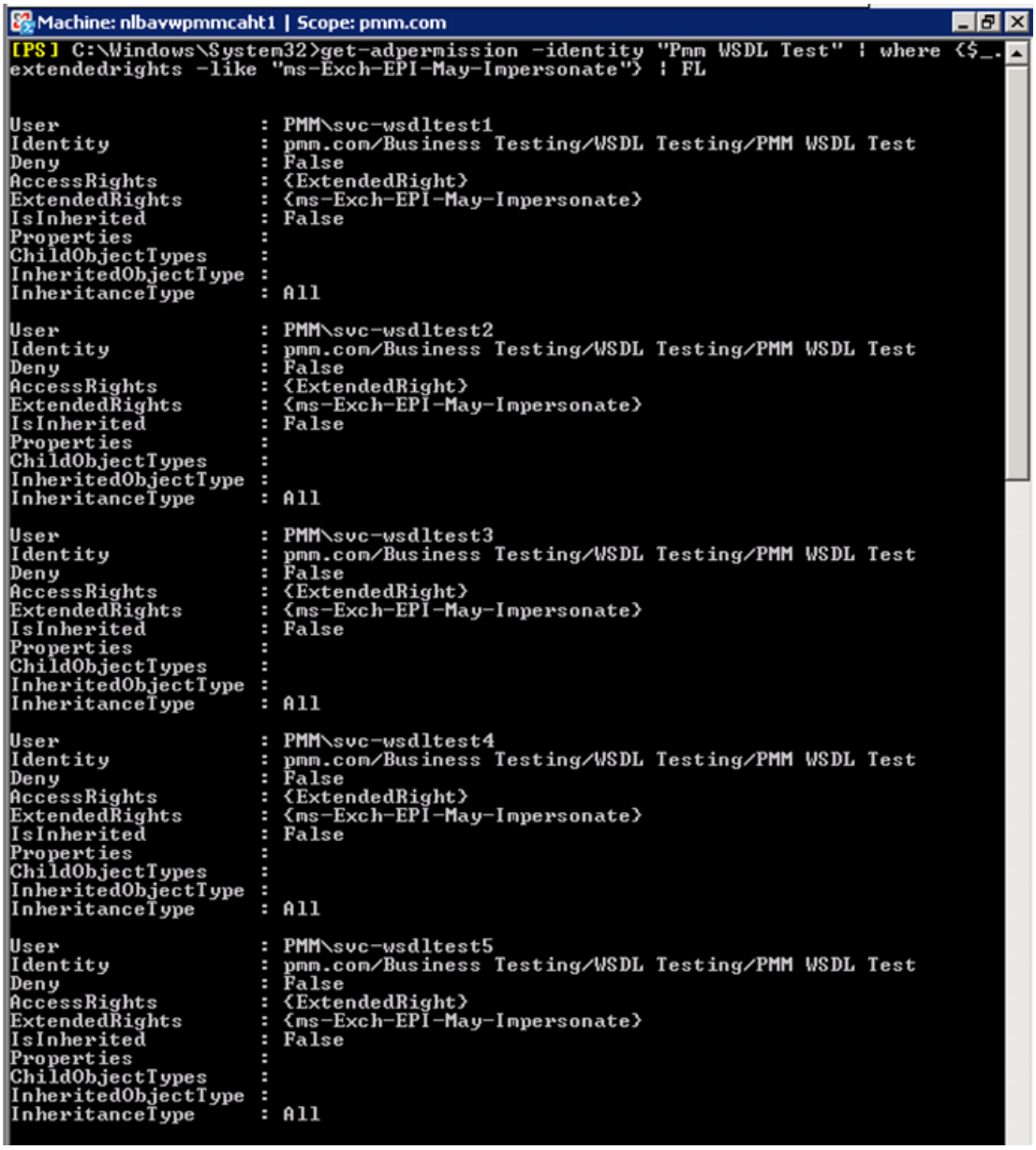
      This figure shows an example:



2 Get the impersonated accounts:

```
get-adpermission -identity "Dev impsync" | where {$_.extendedrights -
like "ms-Exch-EPI-May-Impersonate"} | FL
```

This figure shows an example:



Enabling the impersonation (Exchange Server 2010)

To assign permissions to accounts, Microsoft Exchange Server 2010 uses Role-Based Access Control (RBAC). See http://msdn.microsoft.com/en-us/library/exchange/bb204095(v=exchg.140).aspx.

For example, to enable impersonation with user 'syncuser' for all users:

1 Open the Exchange Management Shell.

2 Run this command:

```
New-ManagementRoleAssignment –Name:exchangeImpersonation - Role:
ApplicationImpersonation –User:syncuser
```

Making the Exchange server trusted in Tomcat

When the Exchange Synchronizer is used, messages are sent between the Web UI server and the server where the Exchange webservice runs (the Client Access Server). These messages are sent in https. The Web UI server must trust these messages, so it must trust the Client Access Server. Therefore, you must import the certificate into the truststore.

Procedure

Complete these steps:

1 Get the certificate from the Exchange instance.

To complete this step successfully, you need the URL of the Client Access Server. The URL is specified in the **MS Exchange URL** field of the MS Exchange Synchronization Settings (ttaad2140m000) session.

Assuming that Internet Explorer 10 is used, complete these steps to obtain the HTTPS certificate of the Client Access Server:

1 Start the browser and navigate to the Client Access Server URL.
2 Click the padlock in the browser's address bar. The website identification is displayed.
3 Select **View certificates**.
4 Select the **Details** tab.
5 Click **Copy to File**. The Certificate Export Wizard starts.
6 Click **Next** and select **DER encoded binary X.509**.
7 Save the file and make a note of the name of the resulting `.cer` file.
8 Close the browser.

2 Import the certificate into the truststore of the Java VM of Tomcat.

Complete one of these steps:

- Create a truststore and import the certificate:

  If there is no trust/keystore for the VM, run this command to create a store and import the certificate into the store:

  ```
  keytool -import -alias [certificate alias] -file [certificate file of
  step 1] -keystore [truststore file to be created]
  ```

Example: `keytool -import -alias pmm -file NLBAVWPMMCAHT1.PMM.com.cer -keystore truststoretest.jks`

After running the command, you must specify your password twice. Then confirm that you trust the certificate.

- Import the certificate into an existing key/truststore:

  If the truststore exists, run this command to import the certificate:

  `keytool -import -alias [certificate alias] -file [certificate file of step 1] -keystore [filename of existing truststore]`

  Example: `keytool -import -alias pmm -file NLBAVWPMMCAHT1.PMM.com.cer -keystore truststoretest.jks`

Note

- Keytool is present in any java JDK.
- For the certificate alias, you can specify anything. Ensure you remember what the certificate alias refers to. The name must be unique.

3 Set the truststore in the Java VM.

For a Windows-based web server, complete the steps below to set the truststore in the Java VM that is used by Tomcat. Replace **<password>** with the password used during step 2 above; replace **<filename>** with the full pathname of the keystore file, such as `C:\keystores\truststoretest.jks`, resulting from step 2 above:

1 Run the Windows registry editor as administrator.

2 Navigate to the registry node of the Java parameters of the Tomcat service for Web UI, such as `Computer\HKEY_LOCAL_MACHINE\SOFTWARE\Wow6432Node\Apache Software Foundation\Procrun 2.0\InforEServerExtensions\Parameters\Java`

3 Edit multi-string key Options and add the following value data:

```
-Djavax.net.ssl.keyStore=<filename>
-Djavax.net.ssl.keyStorePassword=<password>
-Djavax.net.ssl.trustStore=<filename>
-Djavax.net.ssl.trustStorePassword=<password>
```

4 Save the changes and exit the registry editor.

5 Restart the Tomcat service to activate the registry changes.

For a non-Windows based web server, consult the web server documentation on how to add these Java VM options:

```
-Djavax.net.ssl.keyStore=<filename>
-Djavax.net.ssl.keyStorePassword=<password>
-Djavax.net.ssl.trustStore=<filename>
-Djavax.net.ssl.trustStorePassword=<password>
```

Configuring the Exchange Synchronizer in LN

The Exchange Synchronizer runs on the Web UI web server. Before you can start the Exchange Synchronizer, configuration settings must be specified on the LN server.

To configure the Exchange Synchronizer:

1. Log on to the LN server.
2. When using the synchronizer, the table sharing of the tables which are synchronized is impacted. In LN you can have multi site setups such as single logistic/multi finance and multi logistic/multi finance. MS Exchange is not aware of these company structures, so you cannot synchronize activities in a specific company. Therefore, you must ensure these tables are shared:
   - Contacts:
     - tccom140 - Contacts
     - tccom190 - Contacts Synchronization Table
   - Activities:
     - tccom600 - Activities
     - tccom605 - Attendees
     - tccom690 - Activity Synchronizations
     - tccom691 - Activity Synchronization Users
   - All tables related to the tables mentioned

   See "Table Sharing Modeler" in the Enterprise Server online help.
3. Select the **Synchronize Contacts** check box in the COM Parameters (tccom0000s000) session if you want to enable contact synchronization. If this check box is selected, you must also specify ISO codes in the Countries (tcmcs0510m000) and Languages (tcmcs0146m000) sessions.
4. Select the **Synchronize Activities** check box in the COM Parameters (tccom0000s000) session if you want to enable calendar synchronization.
5. Start the MS Exchange Synchronization Settings (ttaad2140m000) session and define a configuration.
6. In the MS Exchange Synchronization Settings (ttaad2140m000) session, click **Users**. The MS Exchange Synchronization Users (ttaad2141m000) session starts. Specify the users that require synchronization of their contacts and calendars.

See the session help.

Note:

To synchronize activities for attendees of the **Employee** type, who are specified in the Attendee (tccom6105m000) session, the following must be applicable for the employee:

- The **User** field is specified in the Employees - General (tccom0101m000) session.
- The **E-Mail** field is specified in the Employees - People (bpmdm0101m000) session.
- The **Email Address** in the MS Exchange Synchronization Users (ttaad2141m000) session is equal to the **E-Mail** field in the Employees - People (bpmdm0101m000) session.

Invitations to an activity can only be sent to the attendees' calendars if the activity's **Meeting Organizer**, as specified in the Attendee (tccom6105m000) session, is also defined in the MS Exchange Synchronization Users (ttaad2141m000) session. The reason for this is that MS Exchange generates the invitations for the organizer.

Starting the Exchange Synchronizer

To start the Exchange Synchronizer:

1. To open the Synchronizer Control page, in the Web UI Administration Console, select **Infor LN > Exchange Synchronizer** .
2. Specify the required information, such as the CRM environment for which the Exchange Synchronizer must be started. See the online help of the Synchronizer Control page.
3. Click **Start**. The Exchange Synchronizer is now running for the specified environment.

Repeat this step for each CRM environment for which the Exchange Synchronizer must be started.

Note:

To stop the Exchange Synchronizer for an environment, select the environment in the Synchronizer Control page and click **Stop**.

Troubleshooting

This table shows possible problems and solutions:

Error Message/Situation	Explanation	Solutions
`Synchronizer ExecutionException occured attempting to get a Future java.util.concurrent.ExecutionException: com.sun.xml.ws.client.ClientTransportException: request requires HTTP authentication: Unauthorized`	This error occurs if the Exchange Synchronizer cannot gain authorization to the Microsoft Exchange Webservice.	In the MS Exchange Synchronization Settings (ttaad2140m000) session, complete these steps: • Verify the **User** and **Password** of the MS Exchange User. • Check if the **Domain** is correctly specified.
`MsExchangeModule Failed to subscribe to Exchange with URL [http://nlbavwtech3.infor.com:8070/websync/ExchangeNotificationServicePort]` `com.sun.xml.ws.client.ClientTransportException:`	This error occurs if the Exchange Synchronizer is not authorized to access the Microsoft Exchange service.	Verify the password that is specified in the **MS Exchange Administrator Settings** section in the MS Exchange Synchronization Settings (ttaad2140m000) session.

Error Message/Situation	Explanation	Solutions
`request requires HTTP authentication: Unauthorized`		
`Synchronizer ExecutionException occured attempting to get a Future java.util.concurrent.ExecutionException: com.sun.xml.ws.client.ClientTransportException: HTTP transport error: javax.net.ssl.SSLHandshakeException: sun.security.validator.ValidatorException: PKIX path building failed: sun.security.provider.certpath.SunCertPathBuilderException: unable to find valid certification path to requested target`	The certificate for the Exchange server was not successfully added to the keystore of the Tomcat server.	This could be one of several problems with the adding of the certificate. Possibly, the certificate was not added, or the certificate may be corrupted. For details on how to add the certificate for the Exchange server to the keystore of the Tomcat server, see "Making the Exchange server trusted in Tomcat" on page 59.
`java.util.concurrent.ExecutionException: com.sun.xml.ws.client.ClientTransportException: request requires HTTP authentication: Unauthorized`	“Impersonation user” is not allowed to log on for the web-service	• In the MS Synchronization Settings, a wrong user password is specified for the MS Exchange User. Specify the correct password. • Basic authentication is not allowed. For details on how to enable basic authentication, see "Configuring Microsoft Exchange" on page 54.
`javax.xml.ws.soap.SOAPFaultException: The server to which the application is connected cannot impersonate the requested user due to insufficient permission`	“Impersonation user” has insufficient permissions	• Ensure you executed all impersonation steps described in the "Configuring Microsoft Exchange" section, and verify the result. See "Configuring Microsoft Exchange" on page 54. • Ensure that the Exchange User that is specified in the MS Exchange Synchronization Settings (ttaad2140m000) session is the same user that is defined while executing the scripts.
Nothing is synchronized		• In the Web UI Administration Console, check whether the Exchange Synchronizer is running. • Check the error log and restart the Exchange Synchronizer. • Ensure at least one user is set to **Active** in the MS Exchange Synchronization Users (ttaad2141m000) session.

Error Message/Situation	Explanation	Solutions
Nothing is synchronized for a specific user		• In the Web UI Administration Console, check whether the Exchange Synchronizer is running. • In the MS Exchange Synchronization Users (ttaad2141m000) session, check if the user is set to active. • Restart the Exchange Synchronizer.

System Requirements

A

This appendix supplies information about the web server system requirements and the desktop system requirements.

For more specific information, see *InforXtreme Knowledge Bulletin 22881401*.

See also: "Prerequisites" in the *Infor Enterprise Server Single Sign On User Guide (U9559)*

System requirements for the web server

Required disk space

The required disk space is calculated as follows.

Required disk space	
Component	**Required disk space (MB)**
Web UI Code	200
Infor LN or Baan Online Help documents (for each language)	40
Web UI form cache (for each package combination and for each language). Only applicable if you use Enterprise Server 8.4.2 or lower.	200
Report Viewer	200

Note:

When the complete set of Infor LN or Baan forms is exported and converted on the Web UI server system, an additional temporary size of 1 GB disk space is required.

Extra disk space is also required when you convert 4GL reports to XML report designs. For details, refer to *Infor LN Development Tools Development Guide (U8883)*.

Java servlet container

The web server requires a Java servlet container that implements servlet API 2.4 or higher.

The table below lists a number of servlet containers and application servers supported with Web UI. These servlet containers are supported on various Operating Systems. For information about the supported Operation Systems, refer to the servlet container's documentation.

Supported Java servlet containers	
Product	**Provider**
WebSphere v6 Note: Web UI supports WebSphere v6. However, the LN Report Viewer requires Tomcat 6.0.32 or higher. For details, refer to Chapter 4, "Install LN Report Viewer ".	IBM: http://www.ibm.com
Tomcat 6.0.32 or higher Tomcat 7.0.30 or higher	Apache: http://tomcat.apache.org/
JBoss Application Server 6, version 6.1.0	Red Hat/JBoss http://www.jboss.org

Note: Tomcat 7 changes the default value of the **useHttpOnly** Context attribute from **false** to **true**. To run Web UI the value of this attribute must be **false**. If you upgrade from a previous version of Tomcat, we recommend that you check the `[CATALINA_HOME]/conf/Catalina/localhost/webui.xml` file and ensure that the Context element for Web UI has this attribute setting: `useHttpOnly="false"` .

See this example:

```
<Context path="/webui" docBase="c:\webui\webapp" debug="0" useHttpOnly=
”false” >
</Context>
```

Java Runtime Environment

Web UI requires Java SE 7. A recent build of (Oracle) Java SE 7 is included in the installer.

Time zone data

To accommodate daylight saving time changes in all time zones, the web server requires a Java Runtime Environment (JRE) containing the most recent time zone data.

Depending on the type of your Web UI installation, the following actions are required:

Actions to ensure the JRE contains the most recent time zone data	
You manually installed a JRE, and manually deployed Web UI into a servlet container.	Complete one of the following steps: • Install the latest JRE version. • Run the Java SE Platform TZupdater Tool. See http://www.oracle.com/technetwork/java/javase/tzupdater-readme-136440.html.

You installed Web UI through the latest version of the Enterprise Server Installer.	No action is required, because the installation contains a JRE version with recent time zone data.
You installed Web UI through an older version of the Web UI installer, such as the Web UI 4.2 installer.	The installation contains a JRE with outdated time zone data. To correct this, complete one of the following steps: • Run the TZupdater Tool. • Uninstall the old Web UI version and install the latest Web UI version. Note: When you uninstall Web UI, you can decide to keep the files that contain the Web UI configuration settings. After the new installation, you can move these files to the appropriate folders under the new Web UI installation folder.

Note:

If no Java environment is installed on the Web UI server, you are prompted to install Java when you start Web UI.

Java heap space

Ensure the Java heap space is sufficient. If the heap space is too small, running multiple 'big' sessions in Web UI (inside a browser) can cause "OutOfMemoryError" messages. To prevent these errors, you can increase the heap space. Infor recommends a heap space of 128 Mb.

To ensure an adequate heap space, complete the following steps:

1. Check the allocated heap space

   Complete the following steps:

   1. In the system tray, right-click the Java icon and, on the shortcut menu, click **Open [version number] Console**. The **Java Console** starts.
   2. Type `s`. The system and deployment properties are displayed.
   3. View the "javaplugin.maxHeapSize" property. The displayed value is in Mb.

      For example: 96m means 96 Mb.

2. If necessary, increase the allocated heap space

   If the allocated heap space is less than 128 Mb, complete the following steps:

   1. Open the Windows Control Panel.
   2. Click **Java**. The **Java Control Panel** starts.
   3. Go to the **Java** tab.
   4. In the **Java Runtime Environment Settings** group, click **View**. The Java Runtime Environment Settings dialog starts.
   5. Perform this step for each row in the dialog.

      Double-click the **Runtime Parameters** column and enter the following value:

      ```
      -Xmx128m -Djavaplugin.maxHeapSize=128m
      ```

      Note: If you perform an update of the JRE, a new entry is added to the list of JREs. After an update, you must add the same parameters for the new version.

User limits (Linux)

On a Linux web server you must set the following limits for the user who starts the web server:

User limit	Value
nofile (soft limit)	65535
nofile (hard limit)	65535

Set these limits in the /etc/security/limits.conf file.

Example

The web server is started by user root. You specify the following in the /etc/security/limits.conf file:

```
root    soft    nofile  65535
root    hard    nofile  65535
```

Environment variables

DISPLAY

On Linux/Unix-systems, the DISPLAY environment variable must be set to see the charts of Infor LN 6.1. These chart images are generated on the web server.

System requirements for the desktop

The "Client Requirement" chapter in the *Infor Ming.le with Infor ES Web UI Sizing and Deployment Guide (B0032)* describes some hardware and software requirements. You can obtain this document through *InforXtreme Knowledge Bulletin 22881401*. In addition, note the information in the following sections.

Windows desktop

Web UI supports these browsers:

- Microsoft Internet Explorer 11, 10, 9, or 8
- Firefox 20 and higher
- Chrome 26 and higher

We recommend that you update the browser frequently. Note that Chrome is supported with limitations when using Web UI with the Infor Ming.le-LN Plug-in.

Web UI requires installation of the Java Runtime Environment and browser plug-in. Web UI runs on Oracle Java SE 7 and 8.

Web UI is supported on the Windows 8 operating system, but only when the browser is running in Desktop mode.

Linux desktop

Web UI supports Firefox 20 and higher.

Web UI requires installation of the Oracle Java 6 Update 31 JRE and browser plug-in.

For an overview of limitations when using Web UI on non-Windows platforms, see *InforXtreme Knowledge Bulletin 1350677*.

To open files exported to Excel, we recommend that you install these packages:

- OpenOffice package
- The xdg-open package

Instructional deployment examples

B

This appendix contains several examples to deploy Web UI.

Deploying Web UI on IBM WebSphere Express v6

Before you begin the deployment of Web UI, consult the IBM WebSphere v6 documentation and ensure that you have:

- An HTTP Server up and running, such as IBM HTTP Server or IIS
- IBM WebSphere v6 up and running

Ensure that the HTTP Server can connect to the IBM WebSphere installation (plug-in setup).

You can use the following procedure to perform these actions:

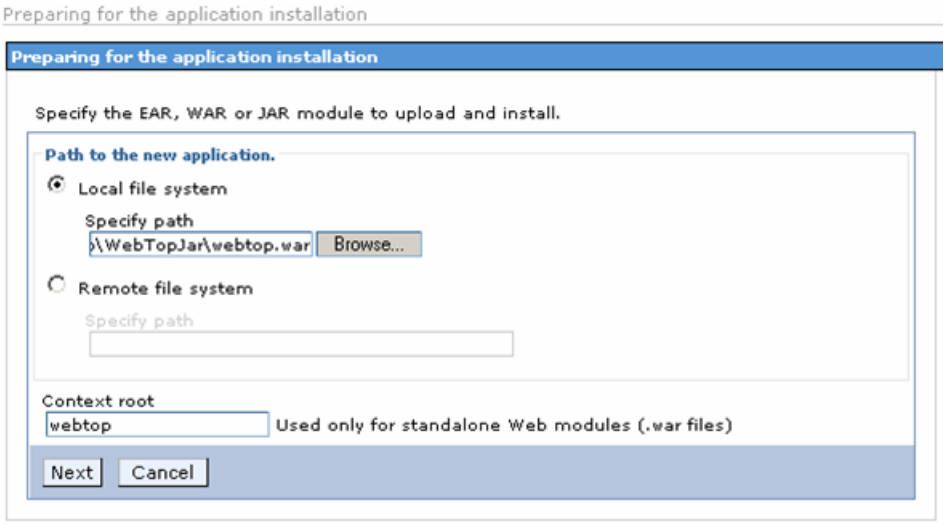
- Deploy Web UI for the first time (first installation).
- Deploy a new Web UI version in an existing environment (Web UI upgrade).

Note: Before you start an upgrade, copy the `webtopProperties.xml` and `smartlink.properties` files from the `[installation-directory]\webtop\config` directory to a directory that will not be overwritten by the new installation. After the upgrade, you can restore the files.

To deploy Web UI:

1. Start the IBM WebSphere Administrative Console.
2. Open the **Applications** node.
3. Select **Install New Application**.
4. In the next screen, locate the `webtop.war` file, and determine the [webui-root] by filling the Context Root field.

   This figure shows an example:



5 Click **Next**.

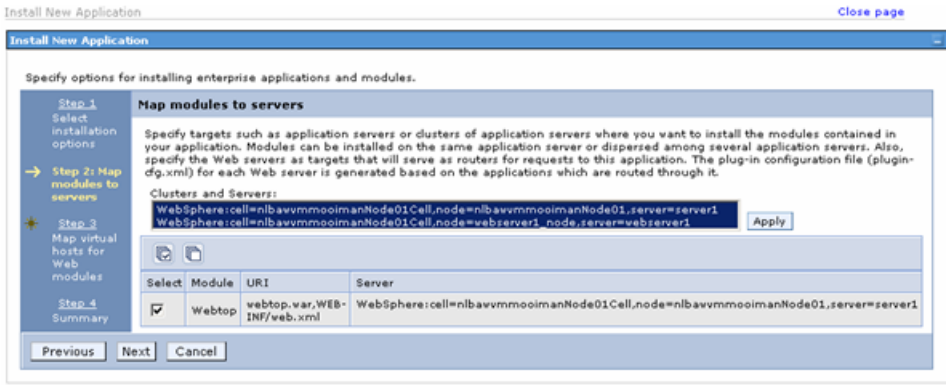
6 In the next screen also click **Next**.

7 In the "Application Security Warnings" screen click **Continue**.

8 The following screen contains a 4-step wizard. Click **Next** to proceed to step 2.

9 Step 2 is an important step. In this setup you must ensure that the Web UI module is also configured in the plug-in configuration file. Select the Web UI module (check box) and select the web server in the list box. Click **Apply**. Then click **Next**.

This figure shows an example:



10 Click **Next** at step 3.

11 Click **Finish**.

12 Click on the "Save to Master Configuration" link.

13 Click **Save**. The deployment is now finished.

14 Start the web application. Click on "Enterprise Application". Select the Web UI web application and click **Start**.

You can access the Web UI through these URLs:

- `http://[hostname]:[port]/[webui-root]/servlet/admin`, for administrator login

- `http://[hostname]:[port]/[webui-root]/servlet/login`, for user login using BaanLogin or Rexec authentication
- `http(s)://[hostname]:[port]/[webui-root]/servlet/fslogin`, for user login using Infor Federation Services authentication or Integrated Windows Authentication. To use this, various settings must be defined. See "Configuring Infor Federation Services" in the *Infor Enterprise Server Single Sign On User Guide (U9559)*.

Deploying Web UI and Report Viewer on Tomcat

To keep the Tomcat application "clean", install your applications in a directory structure outside the Tomcat file hierarchy.

For example, this table shows the structure you must use in Linux:

`/opt/webapps`	Parent directory.
`/opt/webapps/webtop`	Directory for the Web UI application.
`/opt/webapps/config`	Directory for the configuration files, and user profiles, of Web UI.
`/opt/webapps/reportviewer`	Directory for the Report Viewer application.
`/opt/webapps/warfiles`	Directory for the warfiles, "`webtop.war`" and "`reportviewer.war`."

In Windows, use a similar structure:

- `C:\webapps`
- `C:\webapps\webtop`
- `C:\webapps\config`
- `C:\webapps\reportviewer`
- `C:\webapps\warfiles`

To deploy the Report Viewer and Web UI:

1. Create the directories mentioned previously, and put the warfiles in the `warfiles` directory.
2. Manually unzip the warfiles into their application directories:
   For Linux:

```
cd /opt/webapps/webtop
$JAVA_HOME/bin/jar xf /opt/webapps/warfiles/webtop.war
cd /opt/webapps/reportviewer
$JAVA_HOME/bin/jar xf /opt/webapps/warfiles/reportviewer.war
```

For Windows:

```
cd C:\webapps\webtop
%JAVA_HOME%\bin\jar.exe xf c:\webapps\warfiles\webtop.war
cd C:\webapps\reportviewer
%JAVA_HOME%\bin\jar.exe xf c:\webapps\warfiles\reportviewer.war
```

3 Create a configuration file "`webtop.xml`" to specify a new context for Tomcat, and save it in the `/opt/webapps` or `C:\webapps` directory. The file must contain the following:

```
<Context docBase=”/opt/webapps/webtop” useHttpOnly=”false”>
  <Parameter name="WebtopAdminPassword"
    value="TopSecret"
    override="false"/>
  <Parameter name="WebtopConfigPath"
    value="/opt/webapps/config"
    override="false"/>
  <Logger className="org.apache.catalina.logger.FileLogger"
    prefix="localhost_webtop."
    suffix=".txt"
    timestamp="true" />
</Context>
```

Note:

- The paths in this example are in Linux style. For Windows, change them accordingly.
- The "context path" that Tomcat uses is derived from the file name: If you use the default name "`webtop.xml`", Tomcat will find your application at the "`http://[hostname]:[port]/webtop`" URL. If you plan to have multiple versions of Web UI on the same server, you can use a "context path" other than "`/webtop`", such as "`/webtop8_7`". In this case, you must rename your configuration file to "`webtop8_7.xml`". The URL to access the Web UI application changes accordingly to "`http://[hostname]:[port]/webtop8_7`", for example.
- The value of the "WebtopAdminPassword" parameter specifies the password you need to logon to the Infor ES Web UI Administration Console ("`http://servername:portnr/webtop/servlet/admin`"). Change it to an appropriate value.

4 To specify a new context for Tomcat, create a configuration file "`reportviewer.xml`", and save it in the `/opt/webapps` or `C:\webapps` directory. The file must contain the following:

```
<Context docBase="/opt/webapps/reportviewer">
  <Logger className="org.apache.catalina.logger.FileLogger"
    prefix="localhost_reportviewer."
    suffix=".txt"
    timestamp="true"/>
</Context>
```

Note:

- The paths in this example are in Linux style. For Windows, change them accordingly.

- It is recommended not to change the name of the configuration file. Web UI expects the Report Viewer to be present at the context path "`/reportviewer`". If you decide to use another configuration file name (and therefore another context path), you must use the **Report Viewer** page in the Web UI Administration Console to change the location where Web UI expects to find the Report Viewer: Start the Web UI Administration Console and open the **Report Viewer** page. In the **Virtual directory of Report Viewer application** field, specify the new context path (without the leading "/"), and click **Submit**.

5 Copy both context files ("`webtop.xml`" and "`reportviewer.xml`") into the "`conf/Catalina/localhost`" directory inside your Tomcat installation.

Note: On Windows, you can find the Tomcat installation in a location such as `C:\Program Files\Apache Software Foundation\Tomcat 7.0.30`. On Linux, the administrator might have chosen a location such as `/opt/tomcat7.0.30" or "/usr/share/tomcat7.0.30`.

6 Stop and restart Tomcat to ensure the applications are deployed.

Deploying Web UI on JBoss 6.1

To deploy Web UI on JBoss 6.1:

1 Create a `webui.war` directory under `[JBOSS 6.1 installation directory]/server/default`.

2 Unzip the warfile into this new directory.

3 In the top of `run.bat`, add this line:

```
set JAVA_OPTS=-Xms128M -Xmx512 -XX:MaxPermSize=256M
```

4 Restart JBoss.

Prerequisites for the Infor LN server

C

This appendix contains information about the requirements for the Infor LN or Baan Server. The table below provides an overview of the minimum requirements for the Infor LN or Baan server per supported Infor LN or Baan release.

	Porting set	Tools Service Pack	Tools Solutions	Application Service Pack	Application Solutions
Infor Baan IV c4	6.1c.07.03	SP15	22918281 22915993	SP14	-
Infor Baan 5.0c	7.1d.06	SP15	22866553 22915840 22934184	SP11	22901929 22917198
Infor LN 6.1	7.6a.01	SP1	-	-	-

Note:

For Infor LN 6.1, it is strongly recommended to use Enterprise Server 8.5 or higher.

Web UI is backward compatible with the Tools version on the Infor LN or Baan server. That is: the Tools version must be lower than, or equal to, the Web UI version. For example, to run Web UI 8.7, you need Enterprise Server 8.7 or lower.

The following section provides some detailed information on the prerequisites of different Infor LN releases.

Conversion of personalization settings

If your previous Web UI version was lower than 8.6, a conversion of the session personalizations is required. For details, refer to the *Enterprise Server 8.7 - Technical Notes (U9615)*.

If your previous Web UI version was 8.6 or higher, no conversion is required.

SLM license (not needed for Infor LN 6.1 SP2 and up)

You must have a server with Infor Solution License Manager 2.1 (or higher) installed. The SLM client needs to be installed on the LN Server. The Infor Solution License Manager setup can be found on the Infor Enterprise Server installation media.

To license Web UI you need to:

- Register product ID 7002 to the SLM server; the license type is Server License
- Assign the required server to this product ID.

  Web UI licensing is based on the number of Arp servers. So you need to register each LN server here that will be used via Web UI.

  To obtain the server ID, you can run the BclmID program on the LN server. You can find BclmID in the SLM directory.

  Note: For some older versions of the LN server, the server does not expect the BclmID. In this case you need to provide the ID returned by [BSE]/bin/hostid for creating the server license.

Refer to *Infor Solution License Manager - Installation and Configuration Guide (U9200)* for more information about how to configure the SLM server.

Prerequisites for Infor Baan IV c4

Install tools solutions

Download PMC solution 22918281.

Note:

This solution needs a number of pre-requisite solutions. Therefore, you must run the following sessions:

- Generate FTP Script (ttpmc2211m000)
- Download, Scan, and Connect Solution (multi-Level) (ttpmc2210m000)

After these sessions, you can install the solution on the backend with the Process Solutions (ttpmc2101m000) session.

XML Models

Determine if the XML MODELS are present on the Infor LN or Baan Server in the $BSE/lib/XML_MODELS directory.

The XML_MODELS directory must contain three XML files. If this is not the case please download the three XML files from:

- http://secure2.support.baan.com/ftpdownload/updates/B40_c/XFE_model_domain.xml
- http://secure2.support.baan.com/ftpdownload/updates/B40_c/XFE_model_form.xml
- http://secure2.support.baan.com/ftpdownload/updates/B40_c/XFE_model_session.xml

Register Web UI-enabled sessions

Not every Baan IV session is suitable to run in the Web UI. Therefore, before you can load the cache, you must run the Conversion of Web UI Enabled Sessions (ttconwebtop) session. This session adds a property to the sessions, which indicates whether a session can be run in the Web UI. Take the following steps to initialize this property to the correct value:

1 In Worktop, enter the **Run program** command on the Infor LN or Baan back end.

2 Start the ttconwebtop session and then click **Continue**.

Prerequisites for Infor Baan 5.0c

XML Models

Determine if the XML MODELS are present on the Infor LN or Baan Server in the $BSE/lib/XML_MODELS directory:

The XML_MODELS directory must contain three XML files. If this is not the case please download the three XML files from:

- http://secure2.support.baan.com/ftpdownload/updates/7.1_a_tt/XFE_model_domain.xml
- http://secure2.support.baan.com/ftpdownload/updates/7.1_a_tt/XFE_model_form.xml
- http://secure2.support.baan.com/ftpdownload/updates/7.1_a_tt/XFE_model_session.xml

Create the $BSE/lib/XML_MODELS directory and copy the files to the directory.

Register Web UI-enabled sessions

Before you can load the cache, you must run the Register Web UI-enabled sessions session. Not every Infor LN or Baan session is suitable to run in the Web UI. The Register Web UI-enabled sessions session, adds a property to the sessions, which indicates whether a session can be run in the Web UI. Take the following steps to initialize this property to the correct value:

1 In Worktop, enter the **Run Program** command on the Infor LN or Baan back end.

2 Start session ottdsk4200. Note that this session runs without a user interface.

To verify whether a specific session is Web UI-enabled, use session ottdsk4500.

Note:

For Infor LN 6.1 there is no "register Web UI-enabled sessions" session, because the " Web UI enabled" settings are set correctly from the first release onwards.